CHAPTER 3 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the existing environmental, social, and economic conditions within the project area and how these conditions would be affected by the No-action Alternative and the Preferred Alternative. Existing conditions were identified based on literature and data file searches (coordination with local, state, and federal agency personnel) and field investigations. Additional details relating to technical research performed in the preparation of this Environmental Assessment (EA) which are not discussed in this document are included in the project records.

The National Environmental Policy Act (NEPA) of 1969 requires consideration of direct, indirect, and cumulative impacts in addition to measures to mitigate impacts. These impacts are described as follows:

- **Direct impacts** are caused by the project and occur at the same time and place. These are discussed in each resource area subsection (40 CFR 1508.8).
- **Indirect effects** are caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8). Indirect effects are generally not quantifiable but can be reasonably predicted to occur. These impacts are described in each resource area subsection.
- **Cumulative impacts** are the impacts to the environment which result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions (40 CFR 1508.7). These are addressed in Section 3.24.

3.1 LAND USE

3.1.1 Affected Environment

Zoning and Land Use Master Plans

Zoning maps and land use master plans are used to show current and planned uses within Pleasant Grove City. Zoning maps show how the land within Pleasant Grove is currently zoned and land use master plans show proposed future land uses.

Zoning Map

Most of the land within the project study area is currently zoned commercial, including general commercial, commercial sales, and central business district. However, land on the southeast side of the railroad is zoned for medium multiple residential. See Figure 3-1 for the zoning map.

Land Use Map

All of the land adjacent to State Street and the railroad within the project study area is planned for commercial land use, including general commercial and commercial retail[1]. See Figure 3-2 for the future land use map from the Pleasant Grove General Plan.

Parks and Recreation Facilities

Existing Parks

There is one park located within the project study area (see Figure 3-3). Wills Memorial Park is located at 220 South 420 West and includes a pavilion, two baseball diamonds, and two barbecue grills. This park is adjacent to the Pleasant Grove Rodeo Grounds and also houses a branch of the Mountainland Head Start program. Head Start is a federally funded program for preschool children from low-income families and for children with special needs. The park is currently approximately 9.5 acres.

Planned Parks

There are no planned parks within or near the project study area. Wills Memorial Park is planned for an expansion of 3.5 acres at the southeast quadrant of the park increasing the total park area to approximately 13 acres (see Figure 3-3).

Section 6(f)

Coordination with Lyle Bennett of the Utah Department of Natural Resources, Division of Parks and Recreation, has determined that no Section 6(f) properties exist within the project area (see May 16, 2005 letter in Chapter 4).

3.1.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not affect planned land use in Pleasant Grove. Much of the surrounding land is already zoned commercial and it is likely that the trend toward commercial uses would continue whether or not State Street is improved.

The No-action Alternative would not affect any existing or planned open spaces, parks, or recreational facilities within the project area.

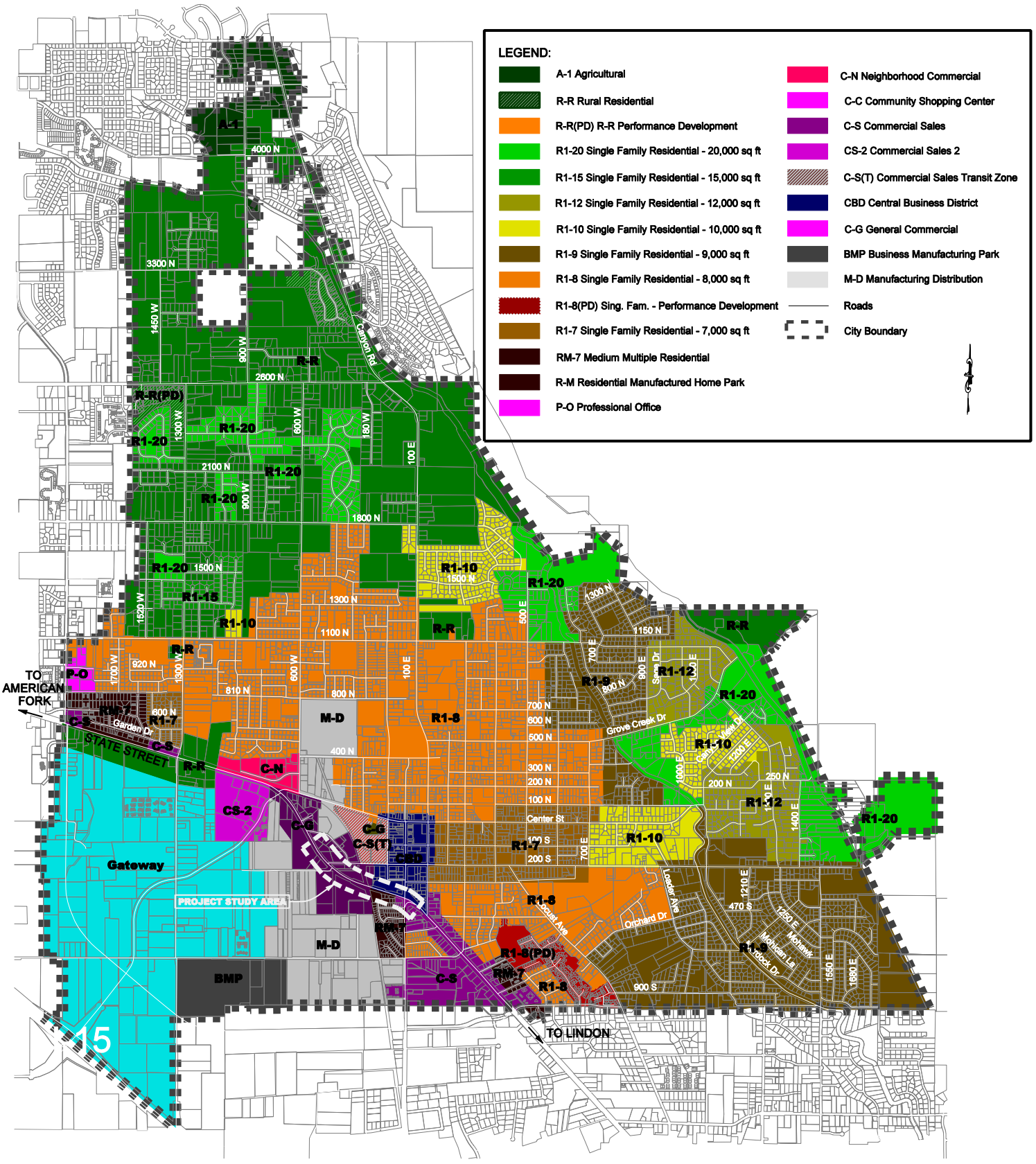
Preferred Alternative

Direct Impacts

Construction of the Preferred Alternative would widen the existing roadway, which would convert some commercial and residential property to roadway use. This would include approximately 0.4-ac of commercial property and about 0.03-ac of residential property.

[1] All land adjacent to the project corridor is planned for commercial land use with the exception of Wills Memorial Park (Pleasant Grove City does not have Zoning or General Plan designations for parks or other public uses). Pleasant Grove City has planned for park improvements and expansion as seen in Figure 3-3.

PLEASANT GROVE CITY ZONING MAP



CURRENT ZONING FIGURE 3-1

$$date$$ $$time$$ $$user$$

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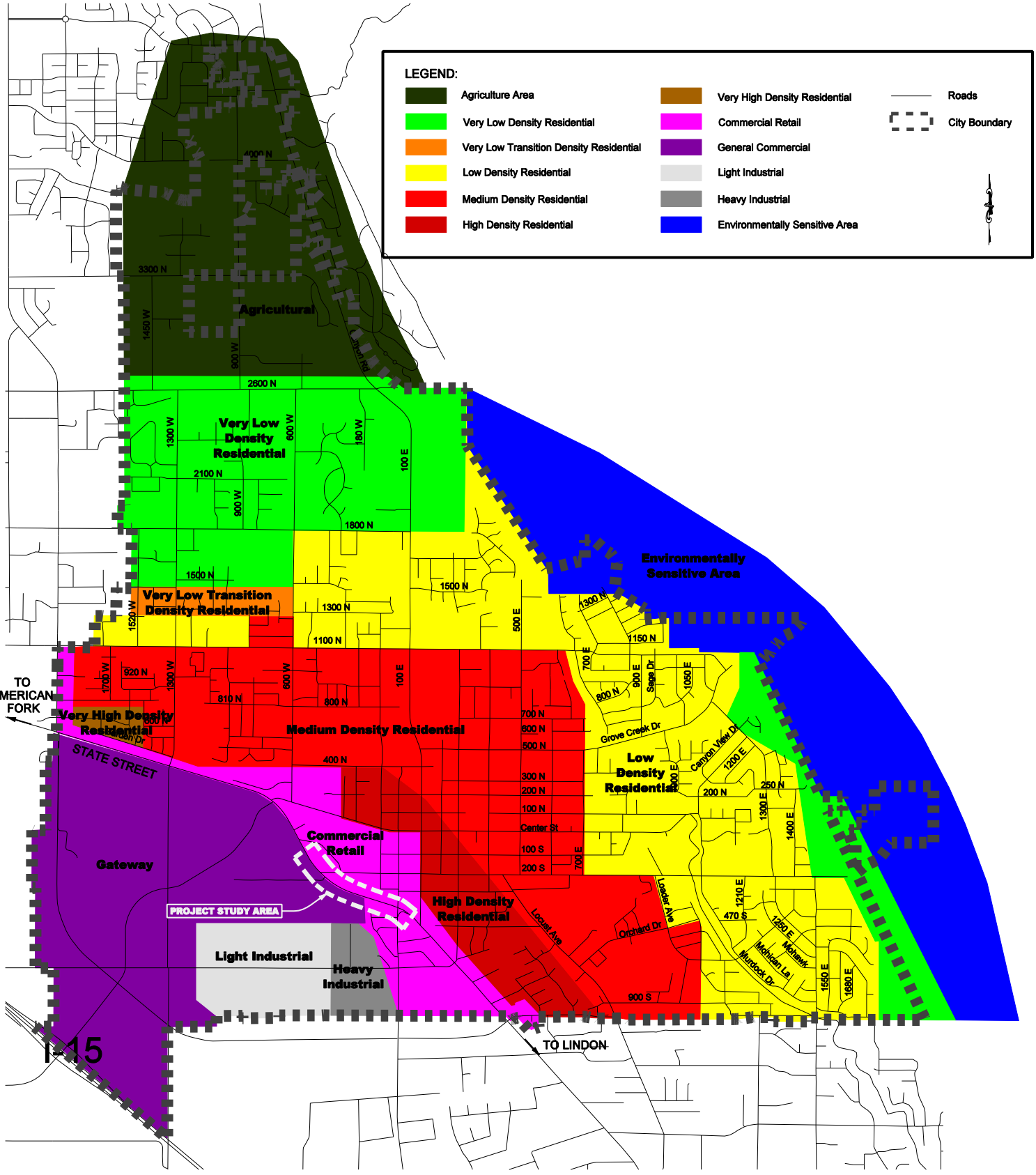
PLEASANT GROVE CITY LAND USE MAP



FUTURE
LAND USE
FIGURE 3-2

$$date$$ $$time$$ $$user$$

$$file$$

$$date$$ $$file$$

EXISTING WILLS MEMORIAL PARK

PREFERRED ALTERNATIVE IMPACTS TO WILLS MEMORIAL PARK

LEGEND:

- PARK BOUNDARY
- PLANNED PARK EXPANSION

SCALE 1: 400

200 0 200 400 800 ft

PARKS MAP
FIGURE 3-3

The city has proposed a new layout of Wills Memorial Park that would increase the number of softball fields from two to four (see Figure 3-3). It is unknown when the city would implement/complete these improvements. The Preferred Alternative is consistent with the new layout of the park which would place the softball outfield, instead of the spectator area, closest to the roadway.

The Preferred Alternative would require 0.6-ac of property from Wills Memorial Park (220 South 420 West), would require the removal of the J.C. Building (used by Mountainland Head Start), and would relocate two barbecue grills.

Indirect Impacts

There would be no indirect impacts to land use as a result of the Preferred Alternative.

3.1.3 Mitigation

Mitigation for Wills Memorial Park will include constructing a new J.C. Building (used by Mountainland Head Start) in another area of the park; relocating the barbecue grills closer to the park pavilion; and financial assistance from UDOT to help construct two additional softball fields in conjunction with planned park improvements. For additional discussion relating to park impacts and mitigation see Draft Programmatic Section 4(f) Evaluation for FHWA Projects that have a Net Benefit to a Section 4(f) Property in Appendix A and the January 5, 2006 letter from Pleasant Grove City in Chapter 4.

3.2 FARMLANDS

3.2.1 Affected Environment

The entire project study area is located within the incorporated boundary of Pleasant Grove City and is highly urbanized. There are no areas of prime, unique, local, or statewide important farmland. There are no properties within the study area that are zoned agricultural or that are currently being used for farming activities.

3.2.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not affect farmlands.

Preferred Alternative

Direct Impacts

The Preferred Alternative would not affect farmlands.

Indirect Impacts

There would be no indirect impacts to farmlands as a result of the Preferred Alternative.

3.2.3 Mitigation

No mitigation is required.

3.3 SOCIAL CONDITIONS

A social assessment was performed for this project by Richard Krannich of Rocky Mountain Social Science. The social assessment involved collection and analysis of data from several different sources. Census data for Pleasant Grove City and selected Census Block Group areas surrounding the project corridor were used to identify social and demographic conditions and trends in the project area. In addition, surveys were conducted in the mobile home park which contains nearly the entirety of the residential population in the project area in March 2004 and March 2005.

3.3.1 Affected Environment

Project Area Background

Like much of the surrounding Wasatch Front metropolitan region, the city of Pleasant Grove has experienced substantial population growth in recent years. Between 1980 and 1990 the city's population grew at a relatively moderate rate, increasing 24.4% during the decade and reaching a total of 13,476 by 1990. Between 1990 and 2000 the city's population increased by 74%, to a total of 23,468 in 2000. This growth, when combined with population increases and development occurring in adjoining communities to the north and south, has been a major contributor to increased traffic volumes and congestion on State Street.

Areas of Pleasant Grove City within and adjacent to the project study area are made up of primarily commercial property. This commercial land use pattern is reflected in the relatively limited residential population located within and near to the project corridor. In combination, the five Census blocks that are adjacent to State Street between 200 South and Geneva Road contained a total population of only 279 persons at the time of the 2000 Census, most residing in neighborhoods that do not immediately adjoin State Street. Three properties adjacent to State Street are currently being used for residential purposes. These properties include a mobile home park located on the north side of State Street between 200 South and the Union Pacific Railroad (UPRR) tracks, and two homes located on Adams Street (south of State Street, between Geneva Road and the UPRR tracks).

Because residents living within the immediate project area are so heavily concentrated within the mobile home park located north of State Street, that small neighborhood became the primary focal point for assessing potential project effects on localized social conditions (see Section 3.4 Environmental Justice for more information on existing social conditions).

3.3.2 Environmental Consequences

No-action Alternative

A decision to adopt the No-action Alternative would leave existing social conditions and trends in the study area intact. Population growth patterns in Pleasant Grove and adjoining communities would contribute to increased traffic volumes on State Street.

Residents living along State Street would continue to be frustrated by growing traffic volumes and congestion along the roadway. Residents of other neighborhoods located north and south of the corridor who frequently drive on State Street would also continue to be frustrated by traffic congestion. Traffic volumes during peak use periods would continue to cause congestion and safety concerns that are exacerbated by the current two-lane road configuration. Localized social conditions in the mobile home park immediately north of the project corridor would likely continue to be characterized by relatively rapid residential turnover, limited social cohesion, and a concentration of minority and low-income households so long as that residential land use is allowed to persist in the midst of surrounding commercial and industrial land use patterns.

Preferred Alternative

Direct Impacts

The Preferred Alternative would not require any right-of-way from the mobile home park. No residents would be required to relocate and social conditions and trends in the mobile home park would remain intact.

Indirect Impacts

Implementation of the Preferred Alternative would hasten the growth of commercial activity and land use in the project area, creating additional pressures for removal of localized residential areas that already are inconsistent with established zoning and land use plans. As this process occurs, residual residential areas would likely experience increased residential transience and reduced levels of social cohesion as established residents are either forced or elect to relocate. However, such effects would be limited due simply to the relatively small residential population now present within immediate proximity to the project area.

3.3.3 Mitigation

No mitigation is required.

3.4 ENVIRONMENTAL JUSTICE

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, signed by the President on February 11, 1994, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent possible and permitted by law.

Fundamental Environmental Justice principles include:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process
- To prevent the denial of, reduction in, or substantial delay in the receipt of benefits by minority and low-income populations

Executive Order 12898 and the United States Department of Transportation (USDOT) and Federal Highway Administration (FHWA) Orders on Environmental Justice address persons belonging to any of the following groups:

- **Black** - a person having origins in any of the black racial groups of Africa
- **Hispanic** - a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race
- **Asian** - a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent
- **American Indian and Alaskan Native** - a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition
- **Native Hawaiian or Other Pacific Islander** - a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands
- **Low-Income** - a person whose household income (or in the case of a community or group, whose median household income) is at or below the HHS poverty guidelines

3.4.1 Affected Environment

Census Data

According to the 2000 U.S. Census data, the population of Pleasant Grove is predominantly Caucasian with the median household income above that of the Utah County median. Census data on race, income levels, and age for Pleasant Grove City and Utah County are shown in Tables 3-1 and 3-2.

Table 3-1. City and County Population by Race - Year 2000.

Area	Total Population	Caucasian	Black/African American	American Indian and Alaska Native	Asian	Pacific Islander	Hispanic Origin (of any race)
Pleasant Grove	23,468	22,330 (95.2%)	68 (0.3%)	90 (0.4%)	126 (0.5%)	92 (0.4%)	1,069 (4.6%)
Utah County	368,536	340,388 (92.4%)	1,096 (0.3%)	2,206 (0.6%)	3,917 (1.1%)	2,122 (0.6%)	25,791 (7.0%)

Source: U.S. Census Data in Table DP-1 Profiles of General Demographic Characteristics: 2000, Utah

Table 3-2. City and County Income Levels for Project Area - Year 1999.

Area	Median Household Income	Per Capita Income	Families Below Poverty Level
Pleasant Grove	$52,036	$15,268	5.4%
Utah County	$45,833	$15,557	6.8%

Source: U.S. Census Data in Table DP-3 Profile of Selected Economic Characteristics: 2000, Utah

Census Tract, Block Group, and Block data for the project area were analyzed to understand the total population, low-income families, and minority populations that might be affected by the Preferred Alternative. An area description of the Census Tract, Block Group, and Block is provided in Table 3-3 and shown in Figure 3-4.

Census Geography

For Census purposes, the United States is divided geographically by Census Tract, Block Group, and Block.

Census Tract – Census tracts are small relatively permanent statistical subdivisions of a county. Designed to be relatively homogenous units with respect to population characteristics, economic status, and living conditions, census tracts average about 4,000 inhabitants.

Block Group – A subdivision of a census tract, a block group is the smallest geographic unit for which the Census Bureau tabulates sample data (population and housing information collected from a one in six sample of households).

Block – A subdivision of a census tract, a block is the smallest geographic unit for which the Census Bureau tabulates 100-percent data (information based on a limited number of basic population and housing questions collected from every inhabitant and housing unit in the United States).

Table 3-3. Description of Census Tract, Block Groups, and Block in and adjacent to the project study area.

Census Tract	Block Group	Block	Location	Area Description
5.03	3	3000	This Block is located south of State Street, between 1300 W and the railroad tracks.	This Block consists mainly of agricultural, light industrial and commercial uses. Most residences in this Block are located away from State Street and front on other local roads.
	4	4004	This Block is located between Center St, State St, 200 S, and west of the railroad tracks.	This Block contains very few residences. This Block is mostly commercial, retail and light industrial businesses.
		4005	This block is located between Industrial Road, 200 S, and State St.	No residences in this Block.
		4006	Located just Northeast of the Bridge between 200 S, State Street, and the railroad tracks.	This Block consists of 23 mobile homes in an older mobile home park
		4007	Located between 200 S, State Street, 100 W, and Main St.	This Block is mostly retail and commercial businesses that front on State Street. A few residences are located behind the businesses and away from State Street.
		4012	This Block is located between Main St., Hwy 148, 300 S, and State St.	Mostly commercial businesses are located in this block with a few residential houses located away from State Street. Most residences front on the local roads.
		4014	This block backs up to the east side of the railroad tracks on the south east corner of the bridge.	This Block consists of two older single family residences that front on State Street just east of the bridge. This Block also consists of a portion of the mobile home park that is located southeast of the bridge.

Source: U.S. Census Data 2000, http://factfinder.census.gov
Note: the Block Groups extend east and west well beyond the limits of the project study area

Census data for the Blocks are shown in Table 3-4. Each Block Group and Block located adjacent to State Street between 200 South and Geneva Road were evaluated for low-income and minority households. The percentage of minority populations and low-income households within the project study area is shown in Tables 3-4 and 3-7. In addition to the described analysis of the 2000 Census data, the U.S. Department of Housing and Urban Development has indicated that no Community Development Projects, Multifamily housing projects, or Public Housing Projects presently exist within the project study area.

Table 3-4. Population characteristics relating to the Block Data within the project study area.

	Block 3000	Block 4004	Block 4006	Block 4007	Block 4012	Block 4014	Total of All Blocks
TOTAL POPULATION	63	5	62	25	16	108	279
NON-HISPANIC or LATINO	60 (95%)	5 (100%)	55 (89%)	16 (64%)	16 (100%)	94 (87%)	246 (88%)
White alone	60 (95%)	5 (100%)	55 (89%)	14 (56%)	16 (100%)	94 (87%)	244 (87%)
Black or African American alone	0	0	0	0	0	0	0
American Indian/Alaskan Native alone	0	0	0	2 (8%)	0	0	2 (0.7%)
Asian alone	0	0	0	0	0	0	0
Native Hawaiian/other Pacific Islander alone	0	0	0	0	0	0	0
Other race alone	0	0	0	0	0	0	0
Two or more races	0	0	0	0	0	0	0
HISPANIC POPULATION	3 (5%)	0	7 (11%)	9 (36%)	0	14 (13%)	33 (12%)
White alone	3 (5%)	0	7 (11%)	1 (4%)	0	2 (1.9%)	13 (5%)
Black or African American alone	0	0	0	0	0	0	0
American Indian/Alaskan Native alone	0	0	0	0	0	0	0
Asian alone	0	0	0	0	0	0	0
Native Hawaiian/other Pacific Islander alone	0	0	0	0	0	0	0
Other race alone	0	0	0	8 (32%)	0	10 (9%)	18 (6%)
Two or more races	0	0	0	0	0	2 (2%)	2 (0.7%)

Source: U.S. Census Data 2000, http://factfinder.census.gov

As shown in Table 3-4, the Non-Hispanic/Latino population for the census blocks was 88% (combined total of all six blocks), which is slightly lower than Utah County's Non-Hispanic/Latino population of 92% (see Table 3-1).

For individual census blocks, between 0% and 36% of the population was classified as Hispanic. For the combined set of study area census blocks 12% of the population was classified as Hispanic, somewhat higher than the percentage for Utah County overall and considerably higher than for Pleasant Grove City (95%). Very few other minorities live within the project study area.

Survey Data

In addition to the Census demographic data described above, site-specific information regarding the potential impacts of the Preferred Alternative was obtained through door-to-door resident surveys conducted in March 2004 and March 2005 within the project study area. The March 2004 survey identified the resident's length of time living in the house, the household make-up, the economic status, racial background, and general questions regarding neighborhood connectivity. The March 2005 survey also included items relating to household composition,

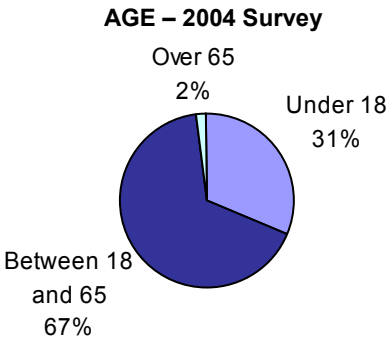
economic status, and racial/ethnic background, along with questions addressing residents' views about possible relocation.

This study area is unique in that most of the property adjacent to the corridor was commercial or light industrial business, with very few households adjacent to the project corridor. An exception to this condition was a small mobile home park located adjacent to the bridge on State Street and across from Wills Memorial Park (see Figure 3-5). The mobile home park contained 23 homes in March 2004 (two of which were not occupied), and 21 homes in March 2005 (two of which were not occupied). The homes located in this mobile home park are for the most part fairly old, and many are in poor condition. Growing concerns about health and safety problems and building code violations led to enforcement actions by Pleasant Grove officials in March 2005 to mandate clean-up activities and correction of code violations throughout the park. Some local officials anticipated that this enforcement action might cause a number of residents to move away from the park rather than invest the money and labor needed to accomplish legally-mandated corrective actions. However, such a response was not evident in the short term, at least; in general, residents appeared to be making efforts to comply with the corrective orders. Most of the mobile homes in the park are sufficiently old and deteriorated such that they could not be moved, making it difficult or impossible for most residents to simply relocate their homes rather than comply with the city's enforcement effort. In addition, the difficulty of selling a home in this park and of securing replacement housing at similar expense leaves many residents with little choice but to comply with the city's requirements for clean-up and code compliance, rather than be faced with condemnation of their homes and subsequent eviction. This mobile home park was the focus of the door-to-door survey and this environmental justice evaluation.

2004 Survey

The 2004 survey involved hand-delivery of an explanatory letter and self-completion survey form (in both English and Spanish language versions) to all households in the park; project personnel returned to the mobile home park one week later to retrieve completed survey forms and answer residents' questions. The survey was filled out and returned by 17 out of 21 occupied and potentially available households, an 81% response rate.

Data derived from the March 2004 survey revealed that 54 individuals, including one person age 65 or older and 17 persons under the age of 18, lived in the 17 households that returned completed questionnaires. The mean household size was 3.2 persons; three households were occupied by one person, two contained two persons, five contained three persons, four contained four persons, two contained five persons, and one contained six persons. Ten of the households (59%) were occupied by persons whose race/ethnicity was classified as white/non-Hispanic, and seven households (41%) were classified as Hispanic/Latino. Nine of the sixteen households for which a respondent was able or willing to report annual household income (56%) fell below the household size-adjusted poverty levels established by the U.S. Department of Health and Human Services (HHS).



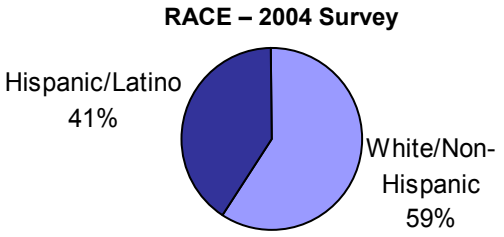
Eight (47%) of the respondents indicated that they had lived in their current home for two years or less; four (24%) had lived there for three to five years; four others had lived there six to ten years; and one had lived there for over 20 years. Most respondents indicated that they knew at least several other adults living in the 10 houses nearest to their own on a first-name basis; one person did not know any adult neighbors; five said they knew just one or two adults in these nearby homes; and five reported knowing ten or more. Seven respondents indicated that they had adult relatives living within a 10-15 minute walk of their home. When asked about the presence of close personal friends living in the neighborhood, six respondents indicated that none of their closest friends lived there; three indicated that two or three close friends were in the neighborhood; five indicated the presence of four or five close neighborhood friends; and three reported that six or more of their closest friends were in the immediate neighborhood. At the same time, nine of the respondents said that they never or almost never visit or get together with neighbors for informal socializing, and 12 said they never or almost never join their neighbors in formal social activities like attending church or cultural events.

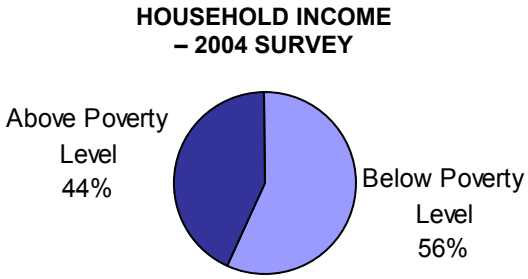
Overall, these results suggest that neighborhood social cohesion is not particularly strong among residents of the mobile home park. Although a majority (10) of the respondents said they would be somewhat sorry or very sorry if they had to move away from the neighborhood, such response may have more to do with a desire to maintain current low-cost housing situations, workplace accessibility, or proximity to friends and relatives living elsewhere in the city than with the strength of social bonds and community cohesion in this small neighborhood.

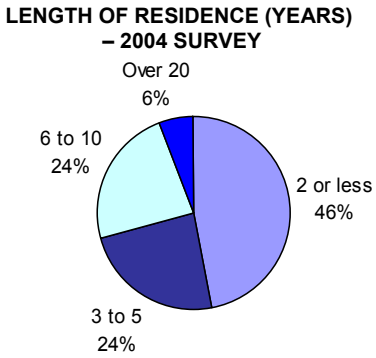
2005 Survey

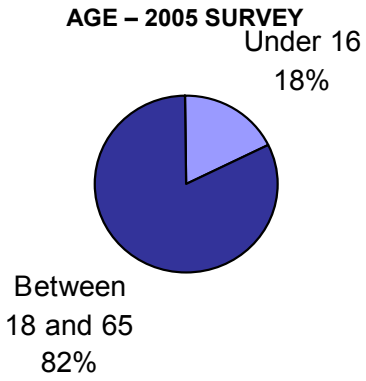
The 2005 survey involved face-to-face interviews with adult householders conducted by a bilingual interviewer to facilitate response from Spanish-speaking individuals. Interviews were completed with adults from 14 of the 19 households, representing a 74% response rate.

The March 2005 survey of mobile home park residents showed that a total of 50 persons were living in the 14 households for which responses were obtained. Eleven of the 14 respondents indicated that they owned or were buying their homes, while the remaining three were renters. Eight respondents said they

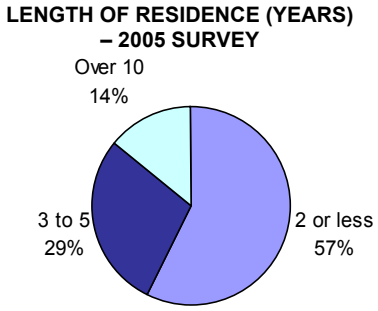




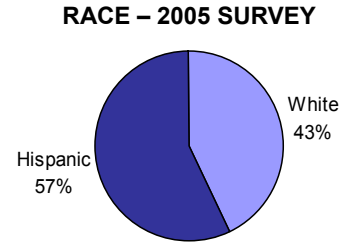


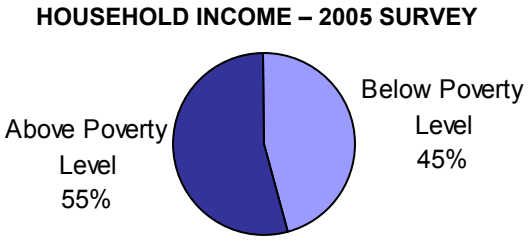


had lived in the mobile home park for two years or less, four had lived there for three to five years, and two said they had lived there for ten years or longer. None of the responding households included persons age 65 or older, while children under the age of 16 were reported to be present in 9 of the 14 households. Nine of the 14 respondents indicated that they or other household members regularly utilize public transportation to go to work or to travel to shopping areas. There is no bus route that runs along State Street in the project area, but residents can catch the bus at Main Street.



Six respondents were classified as white/Caucasian/Anglo, while eight respondents indicated that they and household members were of Hispanic origin. Respondents from 11 of the 14 households participating in the survey were able or willing to indicate whether their household income was above or below the household size-adjusted poverty threshold; of these, five reported total household income levels below 2005 HHS poverty levels. This included three two-person households reporting household incomes falling below $12,830, one five-person household with income below $22,610, and one seven-person household with income below $29,130. Two respondents indicated that they were unaware of the proposal to widen and reconstruct the segment of State Street adjoining the mobile home park; one of these individuals had lived in the park for only about three months, and the other had lived there for two years.





In general, data from the 2005 survey are consistent with the 2004 survey results. In combination, the two surveys indicate that the mobile home park population is characterized by a high concentration of Hispanic households, and a substantial number of households have income levels falling below poverty thresholds. While few of these households contain senior citizens, most have children living in them. Few residents of the mobile home park have lived there for longer than five years. The relatively high degree of residential turnover evident in the mobile home park undoubtedly contributes to the fact that social cohesion does not appear to be especially strong in this small, localized neighborhood.

Minority Populations

Census Tract, Block Group, and Block Data

Table 3-4 shows in closer detail that Block 4006 had a relatively high percentage of Hispanic individuals at the time of the 2000 Census, with seven out of 62 individuals (11.3%) classified as Hispanic. This percentage of Hispanic individuals was considerably higher than Utah County (7%). Block 4006 contains the bridge and aforementioned mobile home park (see Figure 3-4).

March 2004 On-corridor Survey Data

Information collected from the March 2004 survey revealed that 41% of the respondents classified themselves and family members as Hispanic, a significantly higher percentage of minority individuals than was reported in the Block data. All the Hispanic respondents had households with three to five individuals, which on average is slightly higher than the Utah County average of 3.49 individuals per household. The data also shows that five out of the seven (71%) Hispanic respondents were classified as low-income. Survey responses from the racial/ethnic minority respondents varied. Responses from the minority respondents to some of survey questions are shown in Table 3-5.

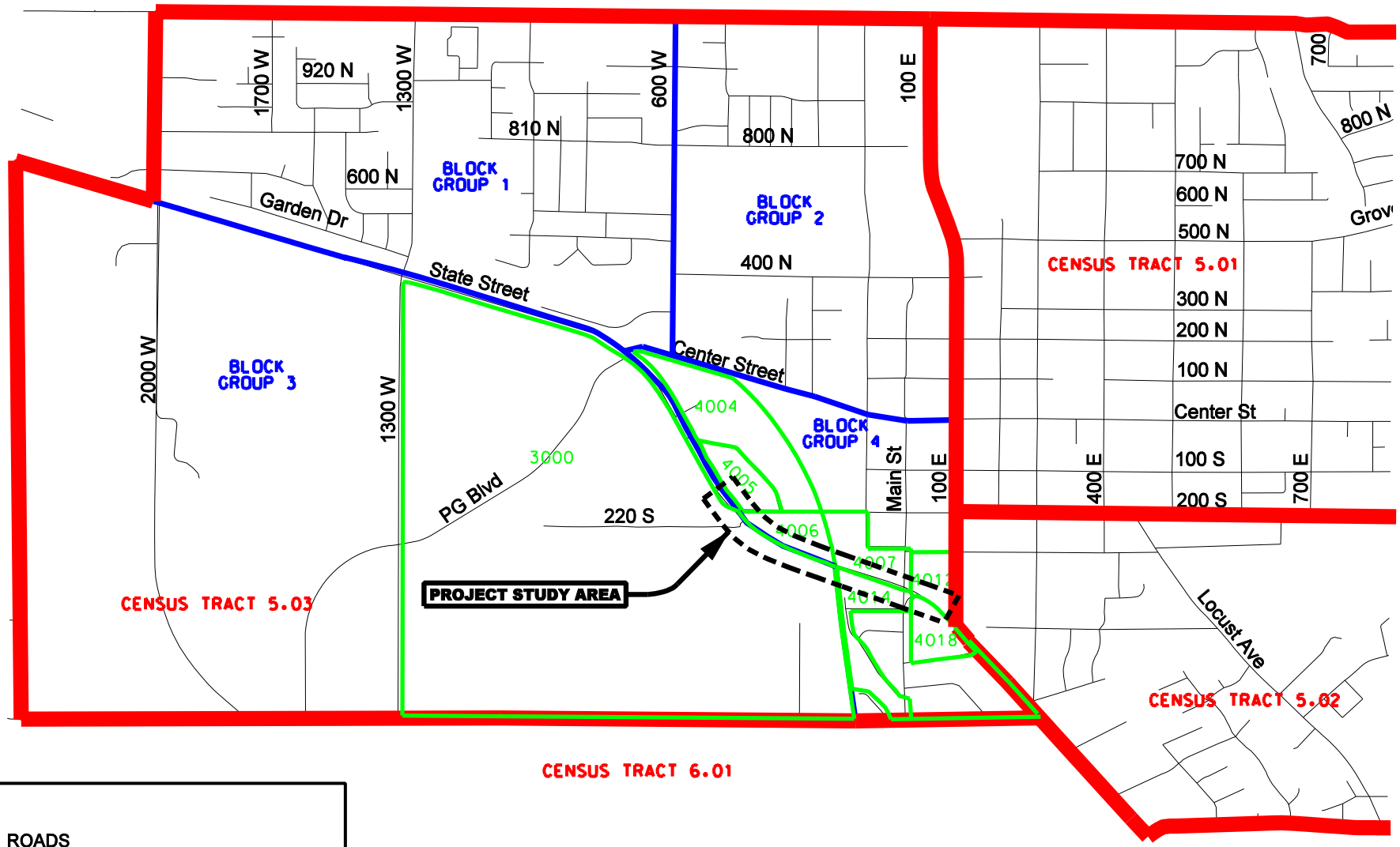
Table 3-5. Select Survey Responses from Seven On-Corridor Racial/Ethnic Minority Respondents (March 2004 Survey).

Question	Minority Respondent # 1	Minority Respondent # 2	Minority Respondent # 3	Minority Respondent # 4	Minority Respondent # 5	Minority Respondent # 6	Minority Respondent # 7
How long have you lived in your current house in this neighborhood?	<1 year	1-2 years	1-2 years	<1 year	<1 year	3-5	1-2 years
Besides members of your own household, do you have any adult relatives living in this neighborhood (within a 10-15 minute walk)?	Yes	No Answer	Yes	Yes	No	Yes	Yes
How many of your closest personal friends live in this neighborhood?	4-5	0	6-10	6-10	2-3	>10	4-5
Suppose that for some reason you had to move away from this neighborhood - how sorry or pleased would you be to leave?	Very Sorry	Somewhat Sorry	Very Sorry	Very Sorry	Somewhat Sorry	Very Sorry	Very Sorry
How often do you get out in your neighborhood for a walk or jog that takes you father than a block away from your house?	1/Week	1/Week	1/Week	1/Week	Never	1/Week	Never
On average, how often do you visit or get together with any of your neighbors for informal social activities like playing cards, cookouts, or going to dinner?	1/Week	Never	>1/Month	>1/Month	Never	1/Week	1/Month
On average, how often do you visit or get together with any of your neighbors for formal social activities like playing cards, cookouts, or going to dinner?	1/Week	1/Month	Never	1/Month	Never	Never	Never
Out of the ten houses located nearest to yours, how many adults who live in these houses do you know on a first name basis?	3-5	0	6-9	6-9	1-2	>12	3-5
What is the total number of people (including children) living in your household at the present time?	4	5	4	4	4	3	5

From the survey, we learn that most of the minority respondents have lived in their homes for a relatively short time with the exception of minority respondent #6. Most minority respondents have relatives living in the immediate area except for minority respondent #5.

$$date$$ $$file$$

CENSUS TRACT AND BLOCK GROUP BOUNDARIES



LEGEND:

- ROADS
- CENSUS TRACT BOUNDARY
- CENSUS BLOCK GROUP BOUNDARY
- CENSUS BLOCK BOUNDARY
- PROJECT STUDY AREA

SCALE 1:1200

600 0 600 1200 2400 ft

CENSUS BOUNDARIES
FIGURE 3-4

01/16/2006 O:\!2004\0401-011 PG Railroad Bridge\3894_cd\Environmental\EA\Figures\3894_Fig_3-5_Environmental Justice.dgn

LEGEND:

- ENVIRONMENTAL JUSTICE POPULATION
- ENVIRONMENTAL JUSTICE STRUCTURE

SCALE 1:250

125 0 125 250 500 ft

ENVIRONMENTAL JUSTICE
FIGURE 3-5

A majority of the minority respondents indicated that they get together with neighbors as much as once a month or more except for minority respondents #2 and #5 who never get together with neighbors for informal activities. The survey also revealed that four out of the seven minority respondents never get together for formal activities such as cultural events or going to church. Two out of the seven respondents indicated that they never or almost never go for a walk or jog that takes them farther than a block away from their house and all of the minority respondents, with the exception of minority respondent #2, indicated that they know the names of at least one to two of their adult neighbors. All minority respondents would be sorry to leave and most were concerned about the potential difficulty of finding another mobile home park within the area that would accept their old mobile homes.

March 2005 On-Corridor Survey Data

Information summarized in Table 3-6 indicates that among the eight minority respondents to the 2005 mobile home park survey all but one considered it somewhat or very important that they be able to move to another location in Pleasant Grove if required to relocate as a result of the proposed road reconstruction. Six of the eight considered it very important, and one considered it somewhat important, to find a place to live with easy access to public transportation. Seven of the eight said it would be very important to find a place to live where housing costs would not be higher than what they currently pay; the eighth responded by saying "don't know" after noting that finding a place with costs no higher than the lot rent they currently pay would likely not be possible. Only half of the minority respondents from the mobile home park felt it would be important to find a place to live near family and/or friends already living in the area. Three respondents anticipated negative impacts on themselves and their families should they be required to relocate, two anticipated a mixture of positive and negative effects, one anticipated positive effects, and two said they did not know whether the effects of relocation would be positive or negative.

Table 3-6. Summary of Select Survey Responses from the Eight On-Corridor Racial/Ethnic Minority Respondents (March 2005 Survey).

Question	Minority Respondent #1	Minority Respondent #2	Minority Respondent #3	Minority Respondent #4	Minority Respondent #5	Minority Respondent #6	Minority Respondent #7	Minority Respondent #8
How important to live in Pleasant Grove if relocated?	Somewhat Important	Very Important	Not Very Important	Very Important	Somewhat Important	Very Important	Very Important	Very Important
How important to find a place to live with easy access to public transportation?	Somewhat Important	Very Important	Very Important	Very Important	Very Important	Very Important	Very Important	Not Important
How important to find a place to live with housing cost no higher than what pay now?	Very Important	Very Important	Very Important	Very Important	Very Important	Very Important	Don't Know	Very Important
How important to find a place to live near family/friends?	Not Important	Very Important	Not Important	Very Important	Not Important	Very Important	Not Important	Very Important
Anticipated effect on self/family if required to relocate?	Somewhat negative	Very negative	Don't Know	Mixed positive and negative	Don't Know	Mixed positive and negative	Very negative	Somewhat positive

Low-Income Populations

A person whose household income is at or below the U.S. HHS poverty guidelines is considered low-income. The 2004 HHS poverty guidelines range from $9,310 for a household unit of one person to $31,570 for a household of 8.

Census Tract, Block Group, and Block Data

As shown in Table 3-7, median household incomes for the Block groups adjoining or immediately adjacent to the project corridor ranged from a low of $35,859 in Block Group 4 to a high of $42,135 in Block Group 1. For all of these block groups median income levels were lower than for Utah County overall ($45,833).

Table 3-7. Household Income in 1999.

Income	Block Group 1, Census Tract 5.02	Block Group 1, Census Tract 5.03	Block Group 3, Census Tract 5.03	Block Group 4, Census Tract 5.03
Total Population	402	902	46	409
<$10,000	7	56	0	43
$10,000-$14,999	30	67	0	6
$15,000-$19,000	20	33	9	18
$20,000-$24,999	39	55	0	52
$25,000-$29,999	53	89	0	65
$30,000-$34,999	35	46	9	15
$35,000-$39,999	17	64	0	16
$40,000-$44,000	15	64	16	26
$45,000-$49,999	30	83	12	26
$50,000-$59,999	78	120	0	29
$60,000-$74,999	17	118	0	30
$75,000-$99,999	39	44	0	60
$100,000-$124,999	22	33	0	16
$125,000-$149,000	0	21	0	7
$150,000-$199,999	0	9	0	0
$200,000>	0	0	0	0
Median Houshold income in 1999	$40,000	$42,135	$41,563	$35,859

Source: U.S. Census Data 2000, http://factfinder.census.gov

March 2004 On-corridor Survey Data

Respondents to the March 2004 mobile home park survey were asked to report their total household income (before taxes) in 2003. Of the 17 survey respondents in the mobile home park, one did not provide income data. Table 3-8 summarizes household income and family size data for households in the mobile home park.

Table 3-8. March 2004 Project Area Income and Household Size Statistics.

Size of Family Unit	Number of Households on Corridor	2003 HHS Poverty Level	Respondents' Reported Household Income	Number of Potential Low-Income Households
1	3	$9,310	< $ 9,310 (1) $9,310-$12,490 (1) $25,210-$28,389 (1)	1
2	2	$12,490	< $ 9,310 (1) $9,310-$12,490 (1)	2
3	5	$15,670	uncertain (1) < $ 9,310 (1) $9,310-$12,490 (1) $15,670-$18,850 (2)	2-3
4	4	$18,850	< $ 9,310 (1) $12,490-$15,669 (1) $15,670-$18,850 (1) $18,850-$22,029 (1)	3
5	2	$22,030	$15,670-$18,850 (1) $22,030-$25,209 (1)	1
6	1	$25,210	$28,390-$31,570 (1)	0

Source: Data was obtained as part of the community social assessment performed by Horrocks Engineers

The response distributions indicate that of the respondents in the mobile home park, potentially ten households are considered below the low-income threshold. Of these, one household reported an income less than $9,310 for a family unit of one, two households of two individuals reported an annual income less than $12,490, two households of three individuals reported an income of less than $12,490, with a third uncertain about whether their income was below that threshold, three households of four individuals reported less than $18,850, and one household of five individuals reported household income below $18,850. Five of the seven Hispanic households reported annual income below the poverty level threshold.

March 2005 On-Corridor Survey Data

Of the 14 respondents who were interviewed in the 2005 mobile home park survey, three were unable or unwilling to report household income data. Five of the remaining 11 households reported income levels that were below household size-adjusted poverty thresholds established by the U.S. HHS.

Mountainland Head Start

A branch of the Mountainland Head Start Program is located in Wills Memorial Park (220 South 420 West) and is adjacent to State Street. Head Start is a federally funded program for preschool children from low-income families and children with special needs and is a child-focused program with the overall goal of increasing school readiness of qualified young children. The Mountainland Head Start program uses two buildings in Wills Memorial Park. One of the buildings is the J.C. Building, owned by Pleasant Grove City, and has one classroom. The other building is owned by the Mountainland Head Start Program and has two classrooms.

These two facilities can serve 60 to 75 children. Playground equipment between the two buildings is also owned by the Mountainland Head Start Program. Head Start is in session from the end of August to the middle of June.

3.4.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not alter conditions in the project area. The concentration of minority and low-income residents in those portions of the project area containing residential land use, particularly in the mobile home park immediately north of the project corridor, would likely persist so long as those residential areas remain in place.

Preferred Alternative

Low-income and Minority Populations

Direct Impacts

The Preferred Alternative does not require any right-of-way from the mobile home park. The construction limits would be at the mobile home property line for the retaining wall structure. The closest existing traffic lane is currently 30-ft from the mobile home park right-of-way. The centerline for the Preferred Alternative shifts to the south which places the closest traffic lane 42-ft from the mobile home park.

Social Conditions

Since no residents of the mobile home park would be required to relocate, social conditions and trends in the mobile home park would remain intact. Vehicular and pedestrian access to the mobile home park would remain the same, with one driveway onto both State Street and 200 South and the same access to sidewalks along State Street. The 5-lane State Street would be more difficult to cross than the existing two-lane road by residents of the mobile home park to access Wills Park and other destinations south of State Street.

Relocations

No residents of the mobile home park would be required to relocate.

Noise

Noise levels would be less within the mobile home park for the Preferred Alternative than for the existing conditions. While there are 12 noise impacts currently within the mobile home park, there would be no noise impacts with the Preferred Alternative. The elevation and horizontal location of the roadway with the 42-in safety barrier effectively drop noise levels below impact criteria.

Visual Conditions

The view from the main activity areas on the row of mobile homes closest to the roadway is primarily of the mobile homes with the surrounding development, including Wills Memorial Park, obscured but somewhat visible. The park area is essentially not visible from the remainder of the mobile home park.

The retaining wall on the south boundary of the mobile home park would become a dominant feature for some residents. The nine mobile homes adjacent to the roadway would experience this change; the remaining twelve mobile homes would not have a view of the wall during usual activities.

The retaining wall (including concrete barrier) would range in height up to 26 feet in height. The three westerly mobile homes would be the most impacted, with adjacent retaining wall heights approximately 15 – 20 feet in height. These mobile homes are adjacent to the right-of-way line and there would not be a buffer between them and the retaining wall.

The easterly six mobile homes would be impacted to a lesser degree because trees would soften the effect of the retaining wall. This retaining wall, approximately 20 – 26 feet in height, would be visible but would be less dominant in the landscape than it would be without the trees.

Construction

Residents of the mobile home park would experience some disturbance during construction. They would experience temporary inconveniences associated with construction equipment noise and dust. State Street would be closed during the construction period, which would require that other routes, such as 200 South, be used for access to and from State Street south of Geneva Road.

The Preferred Alternative would not produce disproportionately high and adverse human health and environmental effects on minority populations or low-income populations.

Indirect Impacts

There would be no indirect impacts to Environmental Justice resources as a result of the Preferred Alternative.

Mountainland Head Start

Direct Impacts

The Preferred Alternative would require the removal of the J.C. Building (used by Mountainland Head Start).

Indirect Impacts

There would be no indirect impacts to Mountainland Head Start as a result of the Preferred Alternative.

3.4.3 Mitigation

A new J.C. Building (used by Mountainland Head Start) will be constructed in another area of Wills Memorial Park. Coordination with Mountainland Head Start and Pleasant Grove City will be ongoing during the design phase of the project to ensure that the project will not have any adverse effects to the Head Start Program.

3.5 RELOCATIONS

3.5.1 Affected Environment

Most of State Street has existing development on both sides of the roadway. A widened and improved roadway would require additional right-of-way from some properties along State Street in the project area.

3.5.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not displace any residences or businesses. The land adjacent to State Street is undergoing change from residential use to commercial use consistent with current zoning and land use plans (see Figures 3-1 and 3-2). This is expected to continue and would require the displacement of some residences to make way for commercial development.

Preferred Alternative

Direct Impacts

Construction of the Preferred Alternative would not displace any residences or businesses, but would require some additional right-of-way from some residences, recreational facilities, and businesses (see Table 3-9 and Figure 3-6):

Table 3-9. Properties from which Right-of-Way may be Required.

Property #	Property Owner	Address	Current Use
1	Green Desert Properties	420 West State Street	Business (Auto Appearance Plus, Play it Loud, Extreme Toys)
2	Don West	347 West 200 South	Business (Supply Sergeant General Store)
3	Gurrs Inc.	185 West 200 South	Business (Pioneer Plastering and Stucco, Jefferson Whitney Furniture Co.)
4	Hometown Professionals	330 South Main Street	Business (Allred's Ace Hardware, Parts Unlimited)
5	Triple Focus	484 West 220 South	Business (The Marble Place, Highland Motors, The Garage Sale Outlet Store)
6	Pleasant Grove City	220 South 700 West	Recreational Facility (Rodeo Grounds)
7	Pleasant Grove City	220 South 420 West	Recreational Facility (Wills Memorial Park)
8	Bryant and Dennis Christensen		Vacant
9	AMG Enterprises	100 West Adams Street	Historic Home
10	AMG Enterprises		
11	AMG Enterprises	25 West State Street	Business (Power House Motor Sports)

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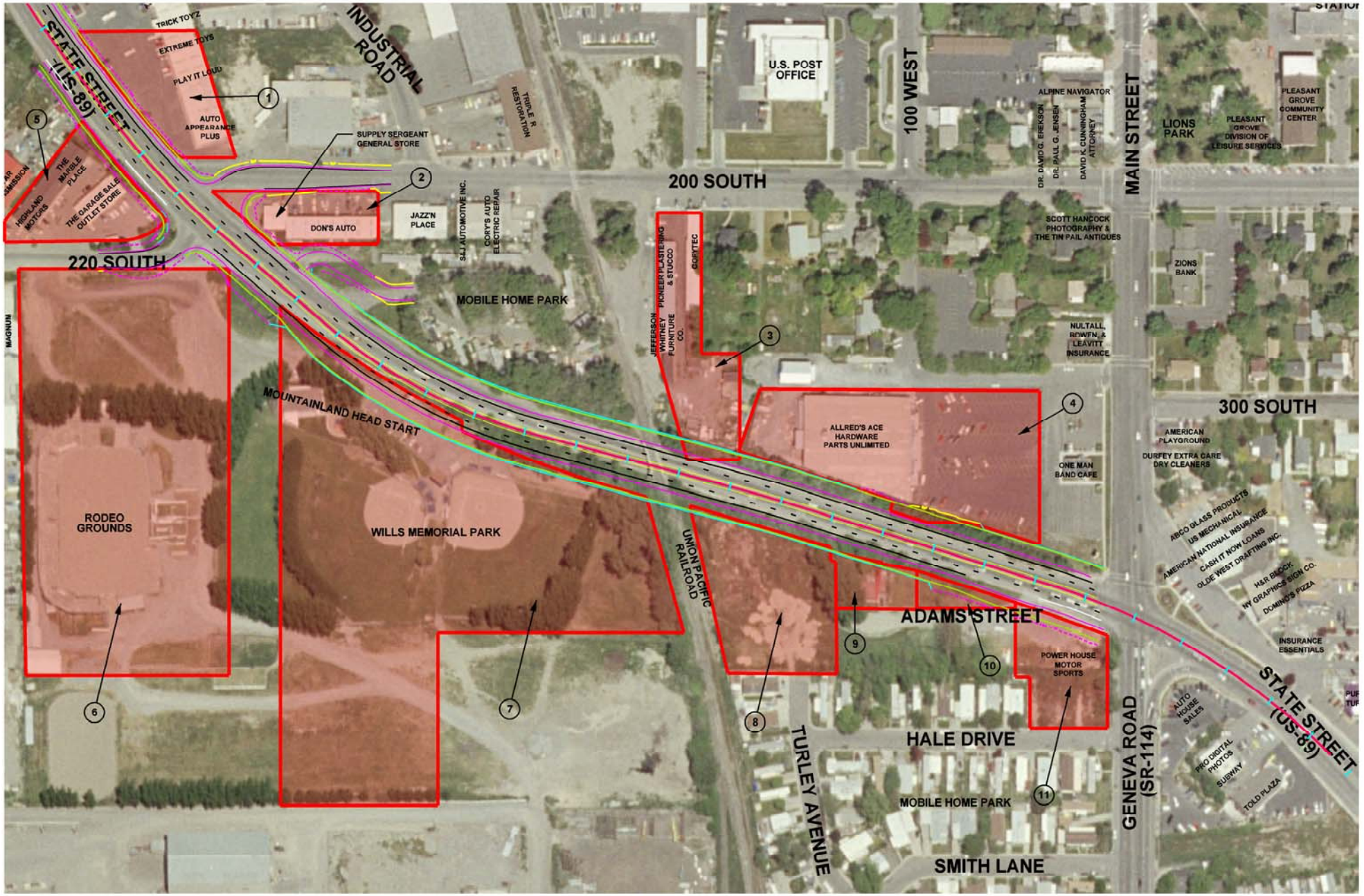


LEGEND:

PROPERTIES FROM WHICH RIGHT-OF-WAY MAY BE NEEDED

SCALE 1: 250

125 0 125 250 500 ft

RIGHT-OF-WAY
FIGURE 3-6

Final determination of property acquisition would be determined during right-of-way acquisition and would include independent valuation of each property.

Indirect Impacts

The land adjacent to State Street is undergoing change from residential use to commercial use consistent with current zoning and land use plans (see Figures 3-1 and 3-2). The Preferred Alternative could speed up commercial development and would displace residences to make way for commercial development.

3.5.3 Mitigation

Right-of-way acquisitions will occur in accordance with federal, state, and local policies. The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

3.6 ECONOMIC CONDITIONS

3.6.1 Affected Environment

The economy of Pleasant Grove is diversified and strong, and has been growing consistently for several years. The following businesses are located within or near the project area (see Figure 2-10 for business locations):

- 5 Star Transmission (550 West 220 South)
- Highland Motors (484 West 220 South)
- The Marble Company (484 West 220 South)
- The Garage Sale Outlet Store (470 West 220 South)
- Power House Motor Sports (25 West State Street)
- Auto House Sales (26 East State Street)
- Pro Digital Photos (46 East State Street)
- Subway (46 East State Street)
- Told Plaza
- Wasatch Ornamental Iron (500 West State Street)
- Northern Furniture Discount Center (470 West State Street)
- Southam & Associates (450 West State Street)
- Trick Toy'z (442 West State Street)
- Extreme Toys (424 West State Street)
- Play it Loud (430 West State Street)
- Auto Appearance Plus (420 West State Street)
- Supply Sergeant General Store (347 West 200 South)
- Don's Auto (345 West 200 South)
- Allred's Ace Hardware (330 South Main Street)
- Parts Unlimited (330 South Main Street)
- One Man Band Café (340 South Main Street)
- ABCO Glass Products
- American National Insurance (385 South Main Street)
- Cash It Now Loans (387 South Main Street)

- Olde West Drafting Inc.(389 South Main Street)
- H&R Block (393 South Main Street)
- NY Graphics Sign Co.
- Domino's Pizza (397 South Main Street)
- Insurance Essentials (63 East State Street)
- The Purple Turtle (85 East State Street)
- Utah Community Credit Union (105 East State Street)
- Daylight Donuts (125 East State Street)

According to the Pleasant Grove City General Plan, all of the land within the project study area is planned for commercial land use.

3.6.2 Environmental Consequences

No-action Alternative

Implementation of the No-action Alternative would have an effect on the local economic conditions. If the State Street roadway improvements are not constructed, it is anticipated that property values along the corridor would increase less rapidly and the area would be less desirable to commercialize, resulting in a loss of tax base for Pleasant Grove City.

Preferred Alternative

Direct Impacts

State Street would be closed during the construction of the roadway embankment and new bridge. Two access points exist between 200 South and Geneva Road: an entrance to the mobile home park and Adams Street, which also serves as an entrance to Power House Motor Sports. The mobile home park entrance is near 200 South and would remain open during construction. The Adams Street entrance is near Geneva Road and would also remain open during construction. Power House Motor Sports also has an entrance from Geneva Road. Power House Motor Sports, and other businesses in the project area would experience temporary construction inconveniences during the reconstruction of the 200 South and Geneva Road intersections. However they should gain positive long-term economic effects due to increased roadway capacity, decreased traffic congestion, improved accessibility, and increased exposure to potential consumers.

Indirect Impacts

The Preferred Alternative is expected to have a generally positive effect on the local and regional economy because of improved traffic flow and decreased travel times. Currently, the congestion is so heavy along State Street that some potential customers avoid traveling there during peak traffic hours. Improved mobility would facilitate the development of the vacant commercial parcels within and surrounding the project area. New businesses would add to revenue in the local economy through sales and property taxes and would provide employment opportunities.

3.6.3 Mitigation

Access will be maintained to all businesses and residences during construction. Where minor impacts to businesses (such as driveway reconstruction and parking lot reconfiguration) may

occur, the property and business owners will be consulted during the design phase to develop solutions that will best suit the property while fulfilling the purpose and need of the project.

3.7 PEDESTRIANS AND BICYCLISTS

3.7.1 Affected Environment

Pedestrians

Sidewalks currently exist only in some areas of the project study area. These sidewalks are in poor condition and the existing longitudinal grades of sidewalks along State Street exceed the maximum gradients established by the Americans with Disabilities Act (ADA) of 1990. There are no school walking routes within the project area.

Bicyclists

Currently bicyclists travel in the shoulders (5-7 ft wide) along State Street.

Trails

Existing Facilities

There are no existing trails along the project corridor.

Planned Facilities

Bicycle lane trails are planned along 200/220 South (Battle Creek Trail) and along Main Street/Geneva Road (Main Street Trail) (see Figure 3-7). A 10-ft shared trail (Utah Valley Trail) is planned adjacent to the Union Pacific Railroad corridor through American Fork which would end on the north side of State Street (see Figure 3-7). Currently, there are no plans to extend this trail across State Street.

3.7.2 Environmental Consequences

No-action Alternative

Pedestrians

Pedestrian mobility and safety would not be improved. Sidewalks in the project area would not be repaired or extended to the project limits.

Bicyclists

Bicyclists would continue to travel in shoulders (5-7 ft wide) along State Street.

Preferred Alternative

Direct Impacts

Pedestrians

Pedestrian mobility and safety would be improved through the construction of new 6-ft sidewalks on both sides of the road that would meet the guidelines established by the ADA and would extend to the project limits.

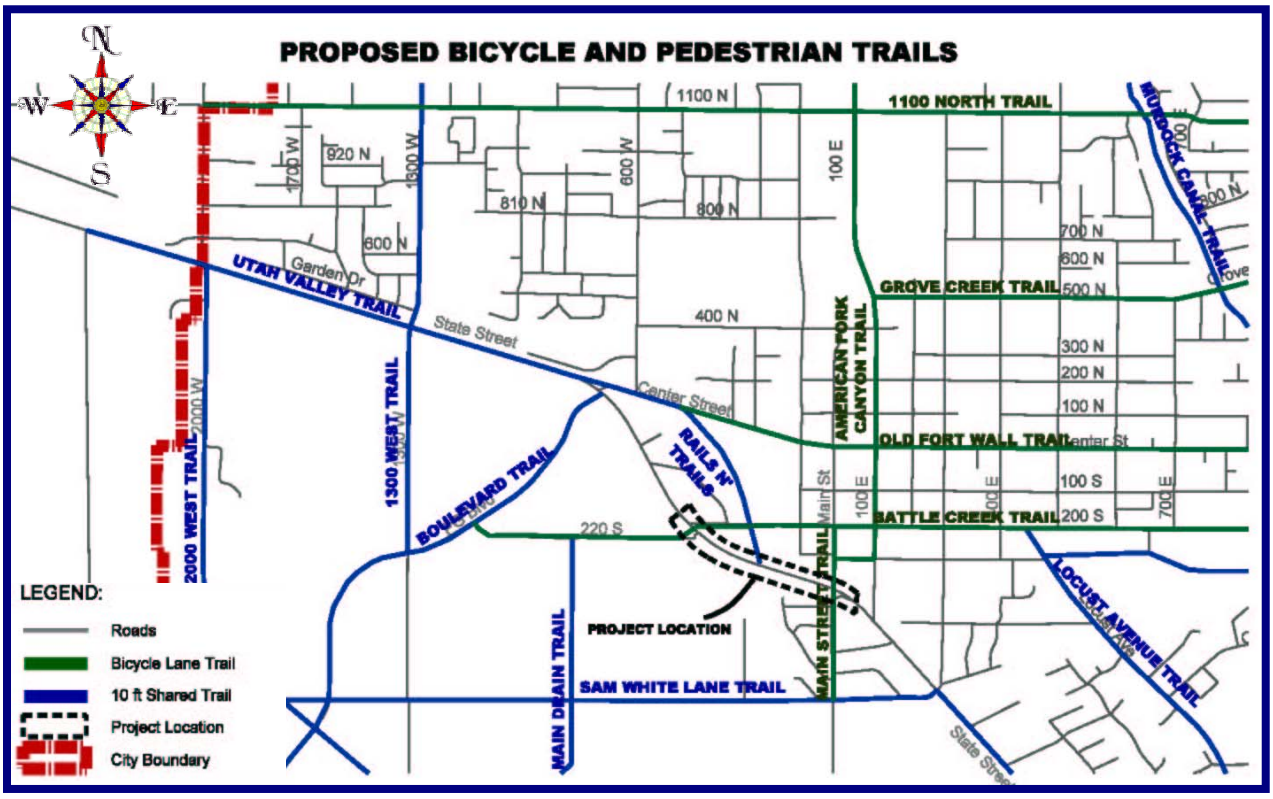


Figure 3-7. Planned Trails.

Bicyclists

Bicyclists would be able to travel in 8-ft wide shoulders located on both sides of State Street.

Trails

The Preferred Alternative would maintain the State Street-200/220 South intersection and would widen and improve the State Street–Geneva Road signalized intersection. These improvements would help accommodate the planned bicycle trails along 200/220 South (Battle Creek Trail) and along Main Street/Geneva Road (Main Street Trail). The 10-ft shared trail along the railroad (Rails n' Trails) is planned to end just north of State Street; therefore, the Preferred Alternative would not prevent the construction of this planned trail.

Indirect Impacts

There would be no indirect impacts to pedestrians and bicyclists as a result of the Preferred Alternative.

3.7.3 Mitigation

Continuous sidewalks will be provided on both sides of State Street. Crosswalks for State Street will be placed at all signalized intersections.

3.8 AIR QUALITY

3.8.1 Affected Environment

Attainment Status of Study Area

The Clean Air Act Amendments (CAAA) of 1990 require that the U.S. Environmental Protection Agency (EPA) set standards for pollutants that are considered harmful to public health and environment. Pollutants identified for concern are carbon monoxide (CO), nitrogen dioxide, ozone, lead, particulate matter smaller than 10 microns (PM_{10}), particulate matter smaller than 2.5 microns, and sulfur dioxide. Areas which have recorded violations of the National Ambient Air Quality Standards (NAAQS) are designated as non-attainment areas and a State Implementation Plan (SIP) or Maintenance Plan must developed by the Division of Air Quality that identifies control strategies to be implemented and allowable emissions levels that must be met for the area to attain and maintain the NAAQS. Table 3-10 displays the air quality non-attainment status for pollutants in Utah County for areas outside of Provo and Orem. The PM_{10} SIP was approved December 23, 2002.

Table 3-10. Air Quality Attainment Status for Motor Vehicle Related Pollutants in Utah County outside of Provo and Orem.

Non-Attainment Area	Pollutant	Status
Utah County	Particulate Matter (PM10)	Non-Attainment Area

Source: Utah Division of Air Quality (http://airquality.utah.gov/GRAPHICS/MAPS/non_attn.pdf)

Air Quality Conformity Requirements

The CAAA 42 U.S.C. 7476(c) requires that federal actions conform to the SIP (and Maintenance Plan) approved under section 110 of the act. The Transportation Conformity Rule, Section 40 CFR parts 51 & 93, establishes standards and guidelines to be followed in determining conformity of a proposed transportation project to the SIP. Specifically, the proposed transportation project must come from a Long Range Transportation Plan (LRTP) which demonstrates that the proposed project, when analyzed regionally with all other proposed transportation improvement projects, conforms to the control strategies and emissions levels outlined in the SIP or Maintenance Plan. In a letter dated June 2, 2005, FHWA determined that the Mountainland Association of Governments (MAG) Year 2005-2030 LRTP and all included projects conform to the control strategies and emissions levels outlined in Section 40 CFR 90 and the SIP for the State of Utah (see June 2, 2005 letter in Chapter 4). FHWA and FTA

concurred on September 30, 2005 that the MAG Transportation Improvement Program (TIP) for 2006-2010 conforms to the SIP (see September 30, 2005 letter in Chapter 4).

3.8.2 Environmental Consequences

The impacts from air pollutants, primarily CO and $PM_{10,}$ were examined on a project level. In addition to the regional analyses provided by the conformity analysis for the LRTP and TIP, Section 40 CFR parts 51 & 93 of the Transportation Conformity Rule requires localized project analyses of CO and PM_{10} for maintenance and non-attainment areas in order to demonstrate conformity to the SIP. For areas outside of maintenance and non-attainment areas, localized project analyses must be performed if the project does not satisfy the screening criteria specified in the State of Utah SIP. Localized project analysis of CO must be performed quantitatively using the EPA approved CAL3QHC software model.

Table 3-11. Projected Year 2008 and Year 2020 Intersection Level of Service at State Street and Geneva Road.

Year	No-Action Alternative		Preferred Alternative	
	Average Stopped Delay (seconds)	Level of Service	Average Stopped Delay (seconds)	Level of Service
2008	59	E	26	C
2020	178	F	41	D

Intersection operation analysis performed by Horrocks Engineers using Highway Capacity Manual methodology in Synchro and SimTraffic

Although the proposed project is outside of maintenance and non-attainment areas for CO, the intersection Level of Service (LOS) of State Street and Geneva Road, displayed in Table 3-11, does not satisfy the screening criteria established in the State of Utah SIP, requiring hot spot analyses for the signalized intersection of State Street and Geneva Road. Based on the project location PM_{10} attainment status, localized hot spot analysis for PM_{10} is required. A detailed description of these procedures and results are included in the following sections.

Carbon Monoxide Hot Spot Analysis

1-hour concentration, CO hot spot analyses were performed using the EPA approved CAL3QHC model, which can model signalized intersections and mainline through movements. The purpose of the hot spot analyses is to determine whether the Preferred Alternative would result in a violation of the 1- or 8-hour NAAQS for CO.

Use of the CAL3QHC software requires several input values, some of which are assumed. Table 3-12 outlines the required inputs as well as the source and value of each.

Table 3-12. CAL3QHC Input Variable Values and Sources.

Input Variable	Source	Input Value
1-hr Background CO	Utah Division of Air Quality (Cottonwood Monitoring Station)	14 ppm
8-hr Background CO	Utah Division of Air Quality (Cottonwood Monitoring Station)	5 ppm
2008 Running Emissions	MAG Mobile 6 Software	9.6 g/mile

2020 Running Emissions	MAG Mobile 6 Software	6.0 g/mile
2008 Idle Emissions	MAG Mobile 6 Software	95.9 g/mile
2020 Idle Emissions	MAG Mobile 6 Software	57.0 g/mile
Meteorological Conditions	Assumed - Worse Case	-
NAAQS 1-hr Concentration CO	EPA	35 ppm
NAAQS 8-hr Concentration CO	EPA	9 ppm

If the 1-hour CO concentration is greater than 9 ppm, an 8-hour analysis must be performed. This analysis was derived directly from the CAL3QHC 1-hour analysis results using the following method:

$CO_8 = PF*(CO_1 - BG_1) + BG_8$

where: CO_8 = Total 8-hour CO Concentration
PF = Persistency Factor
CO_1 = Total 1-hour CO Concentration
BG_1 = 1-hour Ambient Background CO Concentration
BG_8 = 8-hour Ambient Background CO Concentration

Persistency Factor
According to the *Manual for Air Quality Considerations in Environmental Documents* (published by the FHWA Utah Division and UDOT, October 24, 2001), the concept of a persistency factor (PF) has been used since the mid-1970s and accounts for the variability in both traffic and meteorological conditions. The PF can be calculated from monitored data; however, if insufficient data are available, the Environmental Protection Agency (EPA) recommends the use of a default PF of 0.7 to convert from a peak one-hour concentration to a peak eight-hour concentration. The 0.7 factor was used in the analysis and is considered reasonably conservative. The DAQ has verified that it is reasonably accurate for local conditions of CO episodes.

No-action Alternative

Based on the projected Year 2008 and 2020 travel demand from a capacity restrained traffic assignment of a No-action Alternative (the model will not assign more traffic to State Street than can be handled by the existing roadway facility), a hot spot analysis was performed using CAL3QHC for the signalized intersection of State Street and Geneva Road. Results of the 1-hour and 8-hour CO analyses are displayed in Table 3-13. Although the intersection of State Street and Geneva Road would operate under LOS E in 2008 and LOS F in 2020, the analyses indicate that the NAAQS 1-hour and 8-hour CO standards would not be exceeded in either evaluation year.

Table 3-13. Year 2008 and Year 2020 CAL3QHC Hot Spot Modeling Results for No-action Alternative.

Year and Location	One-Hour CO Concentration (in Parts Per Million)	Eight-Hour CO Concentration (in Parts Per Million)
NAAQS Standard	35	9
2008 - NE corner of intersection	17.1	7.17
2020 - State St. WB departure	16.1	6.47

Preferred Alternative

Direct Impacts

Carbon Monoxide (CO) Analysis

Regional

This project is located in Pleasant Grove which is considered an attainment area for carbon monoxide. Further analysis is not necessary because the regional effects of any individual project are likely to be small and uncertain.

Local

Based on the projected Year 2008 and 2020 travel demand on the Preferred Alternative, hot spot analyses were performed using CAL3QHC for the signalized intersection of State Street (US-89) and Geneva Road. Results of the 1-hour and 8-hour CO analyses are displayed in Table 3-14. As expected, the intersection of State Street and Geneva Road would not violate the NAAQS 1-hour and 8-hour CO standards in either evaluation year. In addition, hot spot analyses indicate a reduction in the 1-hour and 8-hour CO concentrations for both the 2008 and 2020 evaluation period, when compared to those of the No-Action Alternative.

Table 3-14. Year 2020 CAL3QHC Hot Spot Modeling Results for Preferred Alternative.

Year and Location	One-Hour CO Concentration (in Parts Per Million)	Eight-Hour CO Concentration (in Parts Per Million)
NAAQS Standard	35	9
2008 - State St. EB Approach	16.7	6.89
2020 - State St. WB Right Turn Lane	15.9	6.33

Based on exhaustive sensitivity testing done for UDOT for the Air Quality Hotspot Manual, it has been determined that roadways with traffic volumes in the range of 50,000 vpd do not cause CO levels to increase to the point of violating the NAAQS one-hour or eight-hour standards. This project's anticipated future volumes are 30,800 vpd, so no violation of the standard is anticipated.

Particulate Matter (PM_{10}) Analysis

Regional

This project is located in Utah County which is a non-attainment area for PM_{10}. FHWA determined that both MAG's LRTP and TIP conform to the SIP. FHWA has determined that this project is included in the TIP for the MAG area. Therefore, pursuant to 23 CFR 770, this project conforms to the SIP.

Local

PM_{10} currently has no EPA-approved quantitative method of hot spot analysis. Therefore, a qualitative analysis is presented. PM_{10} concentrations are related to a combination of direct PM_{10} sources such as fugitive dust that comes from vehicles travel on roadways and

secondary reactions of oxides of nitrogen and sulfur which form PM_{10} in the atmosphere. It is believed that traffic volumes and corresponding level of service have less impact on PM_{10} concentrations than the larger regional trends in the emission rates and industrial controls. Therefore, it can be expected that PM_{10} in Utah County would remain a regional issue related to prolonged temperature inversions and a gradual build-up of PM_{10} –related pollutants and would not be created by local PM_{10} concentrations of any intersection of State Street in Pleasant Grove.

There are no gravel pits in the area that would contribute to PM_{10} concentrations. The development of the Gateway area would reduce dust from the agricultural fields. As the area continues to develop it is likely that unpaved roads would be paved which would reduce the amount of PM_{10} resulting from vehicular travel. Dust abatement programs during construction would be monitored and would comply with applicable State standards in order to mitigate any temporary construction impacts of PM_{10}.

Ozone Analysis

Regional

This project is located in Pleasant Grove which is an attainment area for ozone. The ozone effects of any individual project are likely to be small and uncertain. Further analysis of ozone is not necessary.

Local

Ozone is a regional pollutant and is not able to be analyzed at the project level; therefore, no further analysis is necessary.

Sulfur Dioxide, Nitrogen Oxide, and Lead Analysis

Region and Local

There are currently no non-attainment or maintenance areas in Utah for any of these pollutants. Due to their regional nature and the minimization of motor vehicles as a source of these pollutant (especially lead), there is no reason to believe the replacement of the State Street railroad bridge in Pleasant Grove would affect concentrations of these pollutants in the project area.

Indirect Impacts

There would be no indirect impacts to air quality as a result of the Preferred Alternative. Neither the No-action Alternative nor the Preferred Alternative would cause a violation of air quality standards and the Preferred Alternative would improve air quality slightly over the No-Action Alternative. There may be additional fugitive dust caused by construction activities as the Gateway area and other properties along State Street develop, but these would be short-term and dust control procedures would be required by the Division of Air Quality.

3.8.3 Mitigation

Mitigation during construction will include the use of dust control measures per UDOT Standard Specification 1572 Dust Control and Watering. A permit for air quality impacts during

construction will be obtained from the Utah Division of Air Quality (UDAQ) by the contractor. The intent of the permit is to control fugitive dust and emissions. Other mitigation will include ongoing signal time maintenance performed by UDOT.

3.9 NOISE

3.9.1 Affected Environment

Traffic noise levels are measured in A-weighted decibels (dBA), which approximate the way the human ear hears sounds at different frequencies. The A-scale emphasizes the higher frequency noise content, since it is more annoying to the human ear. Since traffic noise varies over time, sound levels for this study are expressed as "equivalent levels," or L(eq), and are representative of the average sound level. Figure 3-8 shows the noise levels of common sounds for reference.

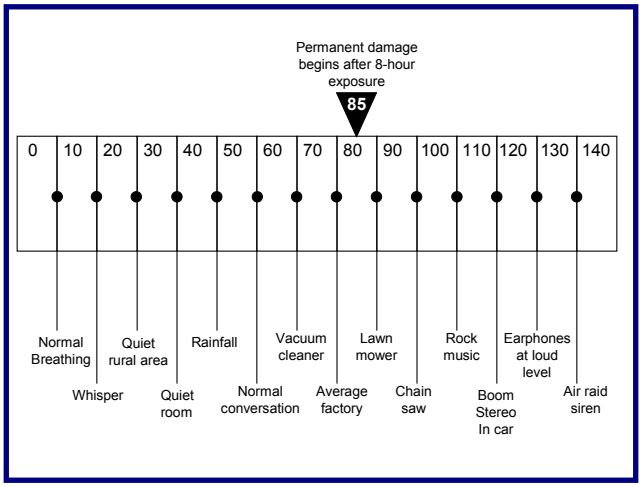


Figure 3-8. Noise levels (in dBA) of common sounds

(adapted from *Living in the Environment* by G. Tyler Miller, Jr., 1994).

The primary sources of noise in the project area are automobile and truck traffic on State Street. Existing noise levels were calculated using the Traffic Noise Model (TNM) 2.5 software. On-site measurements were made to verify the accuracy of the model and are shown in Figure 3-9 and Table 3-15.

Table 3-15. Existing Noise Levels.

Site #	Land Use Type	Hourly *Leq (± 1 dBA)	Address/Location
1	Residential	62.6	Mobile Home Park Northwest of Bridge
2	Park	62.4	Wills Memorial Park, near baseball diamond
3	Residential	66.8	Adams Street

*Leq = the equivalent or average noise level, in units of dBA

3.9.2 Environmental Consequences

The noise analysis was performed in accordance with 23 CFR 772 and the UDOT Noise Abatement Policy (see Appendix C). Predicted 2020 noise levels were modeled for both the No-action and Preferred Alternatives using the TNM 2.5 software.

The UDOT Noise Abatement Policy (revised March 8, 2004) establishes threshold values used to define noise impacts and when noise abatement would be considered. These values are shown in Table 3-16 (refer to Appendix C for full policy).

Table 3-16. Noise Abatement Criteria.

Activity Category	Leq (h)	Address/Location
A	55 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose
B	65 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	70 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above
D	--	Undeveloped lands
E Interior	50 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums

Source: UDOT Noise Abatement Policy (revised March 8, 2004)

UDOT has defined a level of 65 dBA to be the threshold for the consideration of noise abatement for residences and parks (Category B land use, refer to Table 3-16) and 70 dBA to be the threshold for the consideration of noise abatement for businesses (Category C land use, refer to Table 3-16). In addition, a receptor is considered impacted if the predicted noise level in the design year is 10 dBA or more above the current noise level.

As shown in Table 3-17 and Figure 3-9, there are 14 residences in the study area that currently experience a noise level of 65 dBA or greater.

Table 3-17. Existing Noise Impacts.

	Residences	Businesses	Schools & Parks	Total
Noise Impacts	14	0	0	**14**

No-action Alternative

Sound level contours for year 2020 are shown in Figure 3-10. Under the No-action Alternative, traffic on local streets would continue to increase. The maximum increase in noise within the study area would be 2.2 dBA and would occur at several industrial businesses on State Street north of 200 South. There would be a total of 19 noise impacts as shown in Table 3-18 and Figure 3-10.

Table 3-18. Noise Impacts of the No-action Alternative.

	Residences	Businesses	Schools & Parks	Total
Noise Impacts	17	0	2	**19**

Preferred Alternative

Direct Impacts

Year 2020 noise contours and impacts of the Preferred Alternative are shown in Table 3-19 and Figure 3-11. This analysis assumes that a 42-inch concrete safety barrier would be installed from STA 48+00 to 62+50 at the top of the fill slope to prevent cars from exiting the roadway (see Figure 3-11). A total of two noise impacts would occur, including impacts to one mobile home located on Hale Drive and one home on Adams Street. Noise impacts would not occur to any noise-sensitive land uses within Wills Memorial Park.

Table 3-19. Noise Impacts of Preferred Alternative (before mitigation).

	Residences	Businesses	Schools & Parks	Total
Noise Impacts	2	0	0	**2**

Indirect Impacts

There would be no indirect impacts associated with noise as a result of the Preferred Alternative.

3.9.3 Noise Abatement Analysis

According to federal and state policies, specific conditions must be met before traffic noise abatement is implemented as part of the proposed project. Also, noise mitigation must be considered reasonable and feasible. Reasonable and feasible conditions are met when the noise levels are decreased by a minimum of 5 dBA and the noise abatement measure is economically feasible and benefits the majority of front-row receivers. If either of these two conditions is not satisfied, then the noise abatement measure is not considered reasonable. The types of noise mitigation measures considered for the Preferred Alternative include:

Traffic Management Measures

This mitigation measure includes reducing the speed along the proposed roadway. According to the *Highway Traffic Noise Analysis and Abatement Policy and Guidance* report produced by FHWA, a reduction in speed of more than 20 mph would be necessary for a noticeable decrease in noise levels. The Preferred Alternative is classified as an urban arterial and would have a design speed of 45 mph. A speed limit of 25 mph would be needed to assure a noticeable decrease in noise levels, which is inconsistent with the roadway classification. This measure is not a viable abatement measure for this project.

Horizontal and/or Vertical Alignment Shifts

As discussed in Chapter 2, various vertical and horizontal alignment concepts were evaluated for the Preferred Alternative. The Preferred Alternative was studied and selected because this alignment meets the project purpose and need as outlined in Chapter 1, and minimizes environmental impacts, including noise, residential relocations, and environmental justice issues.

EXISTING (2004) NOISE

LEGEND

- EXISTING NOISE CONTOUR (dBA)
- 1 NOISE MEASUREMENT SITE
- NOISE IMPACT (> 65 dBA FOR RESIDENCES/SCHOOLS/PARKS > 70 dBA FOR BUSINESSES)

SCALE 1: 300

150 0 150 300 600 ft

EXISTING (2004)
NOISE LEVELS
FIGURE 3-9

$$file$$
$$user$$
$$time$$
$$date$$

2020 NO-ACTION ALTERNATIVE NOISE

LEGEND

2020 NOISE CONTOUR (dBA)

NOISE IMPACT
(≥ 65 dBA FOR RESIDENCES/SCHOOLS/PARKS
≥ 70 dBA FOR BUSINESSES)

SCALE 1: 300

150 0 150 300 600 ft

2020 NO-ACTION NOISE
FIGURE 3-10

$$file$$
$$user$$
$$time$$
$$date$$

2020 PREFERRED ALTERNATIVE NOISE

LEGEND:

- 2020 NOISE CONTOUR (dBA)
- NOISE IMPACT (≥ 65 dBA FOR RESIDENCES/SCHOOLS/PARKS ≥ 70 dBA FOR BUSINESSES)

SCALE 1: 300

150 0 150 300 600 ft

2020 PREFERRED ALTERNATIVE NOISE FIGURE 3-11

$$file$$ $$user$$ $$time$$ $$date$$

Construction of Berms and Associated Landscaping

Construction of earth berms can be an effective noise abatement measure. Berms would need to be eight to twelve feet high to be effective, which would require a minimum additional right-of-way width of 48 to 72 feet. Vegetation must be extremely dense and at least 100 feet thick, according to FHWA's June 1995 *Highway Traffic Noise Analysis and Abatement Policy and Guidance*, in order to achieve noticeable noise reduction by itself. The construction of berms and/or landscaping to achieve noise mitigation is not reasonable along the corridor due to the cost associated with the large amount of additional right-of-way that would be required.

Noise Barrier Abatement Options

For a sound wall to be effective, it must be high enough and long enough to block the view of the road from the receiver's perspective. The *Highway Traffic Noise Analysis and Abatement Policy and Guidance* states that a good rule of thumb is that the noise barrier should extend four times as far in each direction as the distance from the receiver to the barrier. For instance, if the receiver is 50 feet from the proposed sound wall, the wall needs to extend at least 200 feet on either side of the receiver in order to shield the receiver from noise traveling past the ends of the wall. Openings in sound walls for driveway connections or intersecting streets destroy the effectiveness of barriers. The UDOT Noise Abatement Policy also requires that sound walls achieve at least a 5 dBA reduction at the majority of front-row (adjacent) receivers.

Noise Wall Analysis

As shown in Figure 3-11, two receivers not designated as relocations would be impacted by the Preferred Alternative. Each impacted receiver is listed in Table 3-20, along with the feasible and reasonable noise mitigation options available. More detailed information can be found in the Noise Technical Report.

Table 3-20. Sensitive Receivers Impacted by Noise and Available Mitigation.

Receiver	Address	Existing Noise (dBA)	2020 Build Noise without mitigation (dBA)	Mitigation
Residence	55 Adams Street	63.8	67.6	This residence cannot be mitigated with a noise wall due to the Adams Street access onto State Street.
Mobile home	Hale Drive	62.0	66.4	This residence cannot be mitigated with a noise wall due to the Adams Street access onto State Street.

Alternate Noise Abatement Measures

The UDOT Noise Abatement Policy states that alternative noise abatement measures may be proposed and approved by the Transportation Commission when it can be demonstrated that a severe noise impact would occur. A severe traffic noise impact is defined as a traffic noise impact that increases residential noise levels by 30 dBA or more over existing levels or the resulting noise levels are greater than or equal to 80 dBA. It is not anticipated that either of these conditions would occur by the design year.

Construction Noise Impacts

Construction noise impacts are considered temporary and would be minimized through adherence to UDOT Standard Specification 01355 – Environmental Protection – Section 1.8 Noise and Vibration Control. Extended disruption of normal activities is not anticipated, since no one receptor is expected to be exposed to construction noise of long duration.

During construction of the new railroad bridge, traffic on State Street would be detoured onto Pleasant Grove Main Street and 200 South. Noise impacts due to additional traffic on these streets have been analyzed and are shown in Figure 3-17. Many of the buildings along Main Street and 200 South are businesses and would not be impacted by noise due to the construction detour; however, there are nine residences that would be impacted by a noise level of 65 dBA or greater. These impacts would be temporary and would only last for the duration of the detour.

3.9.4 Mitigation

Two residences would have a noise impact due to the Preferred Alternative. Mitigation for these residences was considered; however, a noise wall cannot be built at these locations due to the Adams Street access onto State Street. Construction noise impacts would be minimized by adherence to UDOT Standard Specification 01355 - Environmental Protection - Section 1.8 Noise and Vibration Control.

3.10 WATER QUALITY

3.10.1 Affected Environment

Groundwater

The ground-water flow direction from Utah Valley's principal aquifer is generally from the surrounding mountain fronts toward Utah Lake. In the project area, the water table is relatively high as substantiated by the United States Geological Survey (USGS) and several wells.

The USGS performed evaluations of groundwater depths and quality in the early 1980s. These evaluations included several locations along the existing UTA/UPRR rail alignment. Based on the 1980's evaluations, the USGS identified groundwater sources at an average depth of 20-ft below the ground surface, with a minimum depth of 13.5-ft. Although groundwater levels have fluctuated since the USGS evaluations, it is expected that current groundwater levels are located 20-ft to 25-ft below the ground surface, measured from the ground surface along the railroad tracks.

There are 15 wells within approximately 500 feet of the railroad bridge (see Figure 3-12). Most of the wells are located adjacent to the railroad right-of-way and are or have been artesian wells. Currently, Pleasant Grove City owns all of the wells with the exception of two privately-owned deep water wells, one located 400 feet to the southeast of the bridge and the other 100 feet to the northeast (see Figure 3-12).

As a result of the relatively high ground water, the original State Street roadway project intercepted an aquifer layer and created a continuously running spring at the underpass (see

Figure 3-12). This spring, along with the existing roadway drainage, is piped for irrigation purposes to fields southwest of the project area.

Surface Water

Storm Drain

Currently, State Street between 200 South and Geneva Road has an impervious area (pavement, sidewalk, etc.) of about 2.6 acres. The aging storm drain system, for this portion of State Street, is no longer capable of adequately accommodating the current needs. This deficiency results in the accumulation of water within the traveled way during typical storm events and can cause the closure of State Street.


Existing Drainage Conditions

3.10.2 Environmental Consequences

No-action Alternative

Under the No-action Alternative, drainage conditions along the corridor would remain the same, with storm water accumulating within the traveled way during typical storm events. None of the identified wells or spring in the project area would be affected.

Preferred Alternative

Direct Impacts

According to Pleasant Grove City officials, the water rights from all of the small artesian wells owned by the City have been transferred to other points of diversion. Therefore, the City-owned wells can be capped.

The Preferred Alternative would increase the impervious area from about 2.6-ac to 5.5-ac. The increase in paved area would raise the 10-year peak flow from roughly 7.0 cfs to 14.0 cfs. The increase in impervious area would not affect groundwater especially since the roadway would be raised and storm water would not infiltrate into the groundwater. No appreciable decline in the local groundwater supply would be expected due to reduction in local groundwater recharge. Most groundwater recharge occurs along the bases of the mountain ranges (several miles away), and the addition of pavement for State Street would have no effect on groundwater recharge. Contaminants collected by the roadway would be picked up by storm water runoff and conveyed to state-approved storm drain systems. Therefore, groundwater would not be negatively affected by the Preferred Alternative.

Storm water runoff would be collected in curbs and gutters along the roadway and enter a new storm drain pipe system through catch basins. All storm water collected from 200 South to the overpass would be routed to the existing Pleasant Grove storm drain system at 220 South. The existing 220 South storm drain system would need to be replaced to increase capacity. All storm water collected from the overpass to Geneva Road would be routed to the existing Pleasant Grove storm drain system at Geneva Road, which has adequate capacity to accommodate increased flow (see Figure 3-12).

New storm drain system facilities would be designed and managed according to requirements of the Utah Division of Water Quality (UDWQ). A Storm Water Pollution Prevention Plan (SWPPP) would be developed and incorporated into the final design plans of the project, and a Notice of Intent (NOI) form would be submitted to the UDWQ prior to construction of the project. The Preferred Alternative would eliminate contaminants entering the surface water from State Street pavement by containing them within the storm drain system and routing storm flows through existing state-approved drainage systems.

Indirect Impacts

After construction of the Preferred Alternative, water quality would be improved with the implementation of a new storm drain system that would comply with current Utah Department of Environmental Quality (UDEQ) and UDWQ standards. UDWQ has identified the primary contaminants of concern from storm water runoff to include: Total Dissolved Solids (TDS), sediments, and inorganics. Other potential contaminants include heavy metals, asbestos, and hydrocarbons.

3.10.3 Mitigation

To minimize storm water impacts to receiving waters, the following will be implemented:

- A new storm drain system will be constructed that will comply with current UDEQ and UDWQ standards.
- A SWPPP will be developed and incorporated into the final design plans of the project, and an NOI form will be submitted to the UDWQ prior to construction of the project.
- Short-term impacts to water quality will be minimized through implementation of UDOT's Best Management Practices (BMPs), found in the Temporary Erosion and Sediment Control Manual (July 1999).
- Existing underpass spring flows will be maintained.

3.11 PERMITS

3.11.1 Environmental Consequences

No-action Alternative

The No-action Alternative would not require any permits.

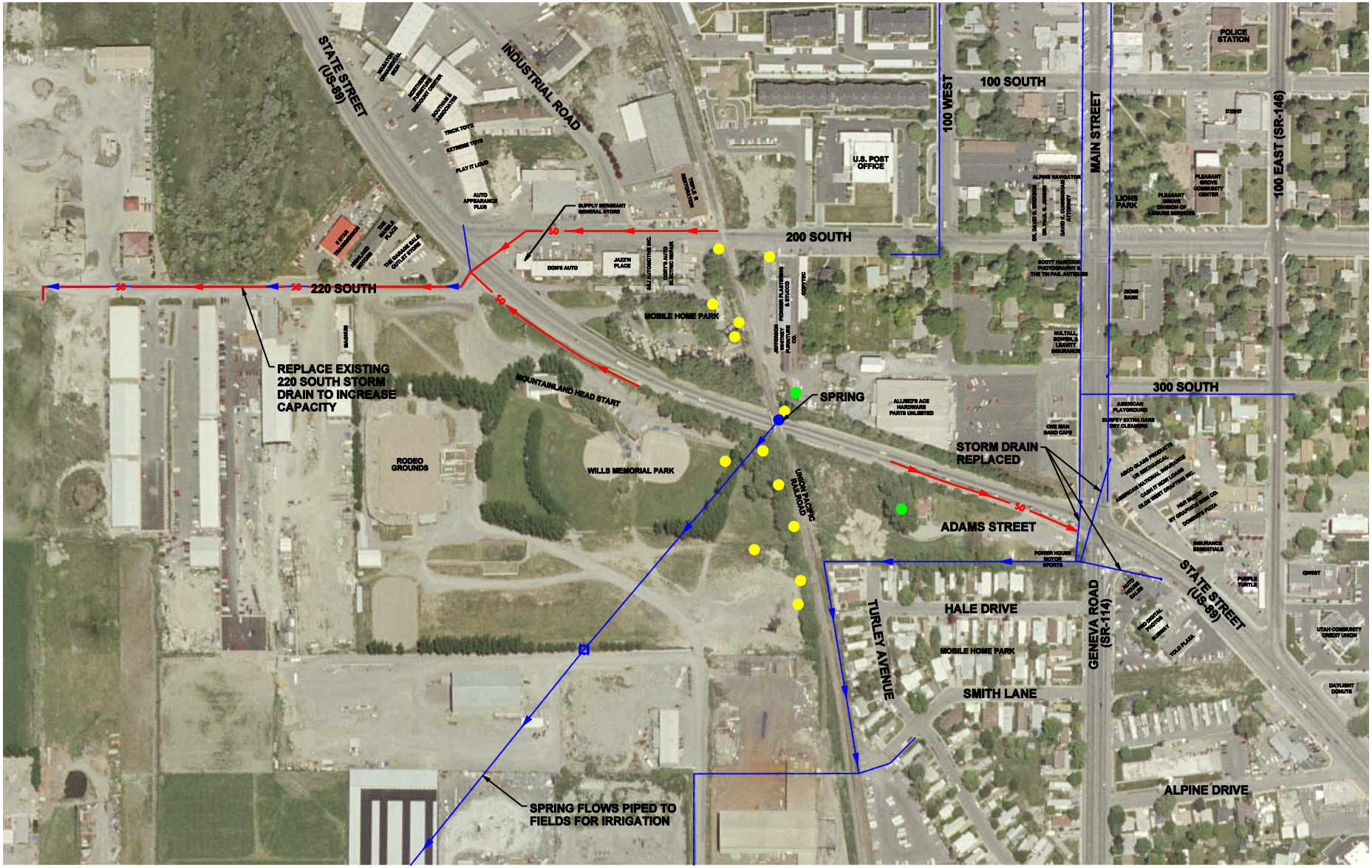
Preferred Alternative

Implementation of the Preferred Alternative would require the following regulatory permits:

Storm Water General Permit for Construction Activities

A permit that grants authorization to discharge under the Utah Pollution Discharge Elimination System (UPDES) is required for projects that disturb more than one acre of surface area during construction. As part of the requirements of this permit, a SWPPP would be developed and incorporated into the final design of this project. Also, an NOI form would be submitted to the UDWQ prior to any construction. Upon completion of the proposed project, a Notice of Termination (NOT) would be submitted to the same agency.

$$date$$ $$file$$



LEGEND:

- SPRING
- CITY-OWNED WELLS
- PRIVATELY-OWNED WELLS
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN IMPROVEMENTS

SCALE 1: 400

200 0 200 400 800 ft

DRAINAGE

FIGURE 3-12

Air Quality Approval Order

A permit for air quality impacts during construction is required. The intent of the permit is to control fugitive dust and emissions. This permit would be obtained from the UDAQ by the contractor prior to starting construction.

3.12 WETLANDS

3.12.1 Affected Environment

Under the Clean Water Act, the United States Army Corp of Engineers (USACOE) regulates placement of dredged or fill material that impacts waters of the United States, including jurisdictional wetlands. No wetlands or waters of the United States are present within or adjacent to the project study area (see September 20, 2005 letter in Chapter 4).

3.12.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not affect wetlands or waters of the United States.

Preferred Alternative

Direct Impacts

The Preferred Alternative would not affect wetlands or waters of the United States.

Indirect Impacts

There would be no indirect impacts to wetlands or waters of the United States as a result of the Preferred Alternative.

3.12.3 Mitigation

No mitigation is required.

3.13 FLOODPLAINS

3.13.1 Affected Environment

The Federal Emergency Management Agency (FEMA) delineates the 100-year floodplains on Flood Insurance Rate Maps (FIRM). Currently there are no maps delineated for the project area. There are no stream crossings within the project corridor; thus there are no floodplains within the project area.

3.13.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not impact or encroach upon floodplains.

Preferred Alternative

Direct Impacts

The Preferred Alternative would not impact or encroach upon floodplains.

Indirect Impacts

There would be no indirect impacts to floodplains as a result of the Preferred Alternative.

3.13.3 Mitigation

No mitigation is required.

3.14 WILDLIFE

3.14.1 Affected Environment

No wildlife resources have been identified within the project study area (see May 17, 2005 letter and May 19, 2005 email in Chapter 4).

3.14.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not affect wildlife resources.

Preferred Alternative

Direct Impacts

The Preferred Alternative would not affect wildlife resources.

Indirect Impacts

There would be no indirect impacts to wildlife resources as a result of the Preferred Alternative.

3.14.3 Mitigation

No mitigation is required.

3.15 THREATENED AND ENDANGERED SPECIES

3.15.1 Affected Environment

The U.S. Fish and Wildlife Service (USFWS) has indicated that no federally listed threatened or endangered species are known to occur in the project area and concurs with a "no effect" determination for threatened and endangered species (see October 14, 2005 letter in Chapter 4).

3.15.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not affect threatened or endangered species (see October 14, 2005 letter in Chapter 4).

Preferred Alternative

Direct Impacts

The Preferred Alternative would not affect threatened or endangered species (see October 14, 2005 letter in Chapter 4).

Indirect Impacts

There would be no indirect impacts to threatened or endangered species as a result of the Preferred Alternative.

3.15.3 Mitigation

No mitigation is required.

3.16 CULTURAL RESOURCES

3.16.1 Affected Environment

Section 106 of the National Historic Preservation Act of 1966

In accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 as amended, and it's implementing regulations found in 36 CFR 800, the State Street Area of Potential Effects (APE) has been inventoried for cultural resources. The APE included adjacent property to existing State Street between 200 South and Geneva Road. EarthTouch, Inc. conducted a literature review at the Utah State Historic Preservation Office (SHPO) and a field cultural resource inventory for the proposed project. Their findings are documented in *A Cultural Resource Inventory of the Bridge/Underpass Crossing at State Street (US-89) Between 200 South and Main Street in Pleasant Grove, Utah County, Utah,* prepared by EarthTouch, June 20, 2005. Additionally, EarthTouch, Inc. prepared a cursory inventory of the structures along the construction detour route.

The term *historic property* is used throughout this section. 36 CFR 800.16(I) defines the term *historic property* as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to Native American tribes that meet the National Register criteria. The term *eligible for inclusion* in the National Register includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria.

To be eligible for the NRHP, a historic property must qualify under one of the NRHP eligibility criteria as defined in 36 CFR 60.4 and shown in Table 3-21.

Table 3-21. NRHP Eligibility Criteria.

NRHP Criterion	Characteristics
A	Associated with events that have made a significant contribution to the broad patterns of our history.
B	Associated with the lives of persons significant in our past.
C	Embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction.
D	Yielded, or may be likely to yield, information important in prehistory or history.

Source: Code of Federal Regulations Title 36 (36 CFR 60.4)

Properties were evaluated based on the Utah SHPO Ratings shown in Table 3-22. Historic resources within the APE which were identified in the survey, along with their respective NRHP eligibility criteria, are shown in Table 3-23.

Table 3-22. Utah SHPO Rating Definitions for Historic Properties.

SHPO Rating	Characteristics
A	**Eligible/Significant:** Built within the historic period and retains integrity; excellent example of a style or type; unaltered or only minor alterations or additions; individually eligible for NRHP under Criterion C; also, structures of known historical significance.
B	**Eligible:** Built within a historic period and retains integrity; good example of a style or type, but not as well-preserved or well-executed as "A" structures; more substantial alterations or additions than "A" structures, though overall integrity is retained; eligible for NRHP as part of a potential historic district or primarily for historical rather than architectural reasons (which cannot be determined at this point).
C	**Ineligible:** Built during the historic period but has had major alterations or additions; no longer retains integrity.
D	**Ineligible:** Out-of-period; built during the modern era.

Along the State Street corridor, one property, the Union Pacific Railroad, has been previously recorded and determined eligible for the NRHP. Two additional properties were determined eligible for the NRHP (see Table 3-23).

Table 3-23. Historic Structures along State Street.

Address	Photo	Date (ca.)	Style	NRHP Criterion
100 Adams Street		1955	Brick Early Ranch	Eligible: B, C
Pleasant Grove Underpass (Site 42UT1452)		1937	Art Moderne/ Art Deco	Eligible: A,C
Union Pacific Railroad and Depot (Site 42UT1029)		1873	-----	Eligible: A

An Intensive Level Survey (ILS) was prepared for the Burton H. and Eva E. Adams House located at 100 West Adams Lane, Pleasant Grove (see Appendix D).

A preliminary inventory of structures along the detour route (200 South and Main Street) was conducted by Earthtouch Inc. Many of these structures are within the boundaries of the Pleasant Grove Historic District established in 1995 (see Figure 3-13). Table 3-24 shows the structures along the detour route and the NRHP status or preliminary NRHP evaluation.

Table 3-24. Preliminary Evaluation of Historic Structures along the Detour Route.

Address	Photo	Date (ca.)	Style	NRHP Status/ Preliminary NRHP Evaluation
185 West 200 South		1907	Commercial	Within Historic District
175 West 200 South		1904/ 1911	Victorian	Within Historic District
169 West 200 South		1917/ 1930	20th Century Other	Within Historic District
111 West 200 South		1900/ 1930	Victorian	Within Historic District
111 West 200 South – ditch segment		1900/ 1930	-----	Eligible
86 West 200 South		1916	Bungalow	Within Historic District
79 West 200 South		1917/ 1927	Craftsman	Within Historic District
46 West 200 South		1915/ 1920	Bungalow	Within Historic District
45 West 200 South		1936	Period Cottage	Within Historic District
214 South Main St.		1884/ 1955	Double Pile	Within Historic District
295 South Main St.		1932	Bungalow	Within Historic District
325 South Main St.		1922/ 1940	Commercial	Ineligible

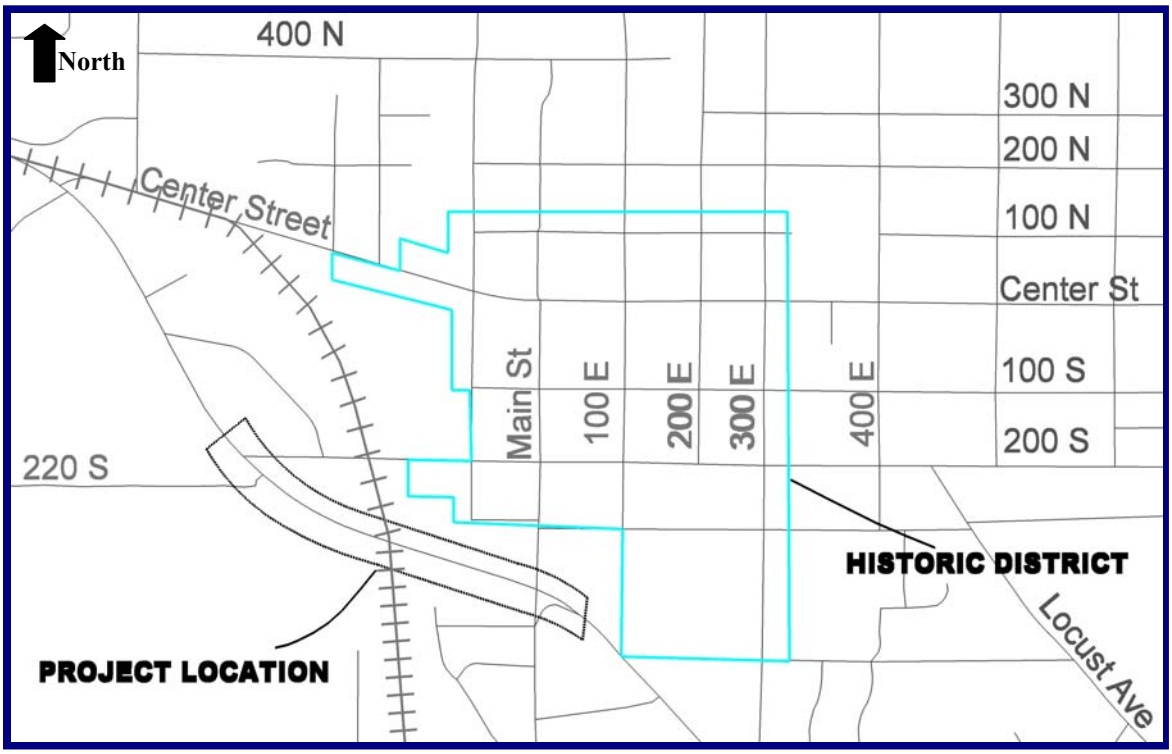


Figure 3-13. Pleasant Grove Historic District Boundary.

Paleontological Resources

The Department of Natural Resources (DNR) Utah Geological Survey (UGS) has conducted a paleontological file search within the APE for the proposed project and has indicated that there are no paleontological localities recorded in the project area (see letter dated March 4, 2005 in Chapter 4). However, the UGS noted Lake Bonneville deposits (Qlts) that are exposed in the project area and have the potential to yield vertebrate fossil localities.

3.16.2 Environmental Consequences

No-action Alternative

Direct Impacts

The No-action Alternative would not directly affect historic structures along State Street.

Indirect Impacts

The No-action Alternative could indirectly affect historic structures along the length of the proposed State Street project. Historic sites may be removed due to commercial development.

Preferred Alternative

Impacts to cultural resources are categorized as *No Effect, No Adverse Effect,* and *Adverse Effect* (as defined in 36 CFR 800.5). 36 CFR 800.16 (i) states that "effect means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register."

No Effect

A finding of ***No Effect*** occurs either when no historic properties are present or historic properties are present but the undertaking would have no effect upon them as defined in 36 CFR 800.

36 CFR 800.4(d)(1)
No historic properties affected. Either there are no historic properties present or there are historic properties present but the undertaking will have no effect upon them as defined in §800.16(i).

36CFR 800.16(i)
Effect means alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.

No Adverse Effect

A finding of ***No Adverse Effect*** occurs when the undertaking's effects do not meet the criteria of 36 CFR 800 for Adverse Effect or the undertaking is modified or conditions are imposed to avoid adverse effects. This type of impact occurs when the alternative impacts a historic property but does not completely alter the characteristics that qualify it for eligibility for the National Register.

36 CFR 800.5(b)
Finding of no adverse effect. When the undertaking's effects do not meet the criteria of paragraph (a)(1) of this section or the undertaking is modified or conditions are imposed…to ensure consistency with the Secretary's standards for the treatment of historic properties (36 CFR part 68) and applicable guidelines, to avoid adverse effects.

Adverse Effect

An ***Adverse Effect*** as defined in 36 CFR 800 is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register.

36 CFR 800.5(a)(1)
Criteria of adverse effect. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Examples of an Adverse Effect include complete use of historic structures for the road improvements, access restrictions, large percentage of property used for road right-of-way, and relocations of the residence due to closeness of the roadway.

Determination of Eligibility and Finding of Effect (DOEFOE)

FHWA, through UDOT, determines the types of effects for each historic property within the project corridor. The Determination of Eligibility and Finding of Effect (DOEFOE) for the historic property at 100 Adams Street (see March 23, 2005 DOEFOE in Appendix D) has been prepared by UDOT, under the direction of FHWA, and agreed to by SHPO. A DOEFOE for the historic bridge and railroad has also been completed (see July 12, 2005 DOEFOE in Appendix D). The DOEFOEs outline the eligibility determinations and the type of effect resulting from implementation of the Preferred Alternative and impacts for each historic property.

A complete discussion of the impacts, avoidance alternatives, and measures to minimize harm to cultural resources is presented in Appendix A – Programmatic Section 4(f) Evaluations, which are required when the proposed federal project uses Section 4(f) resources.

Direct Impacts

Table 3-25 lists the historic properties within the project limits along State Street that are recommended eligible for inclusion to the NRHP and the type of effect to each property due to the Preferred Alternative.

Table 3-25. Effects to Historic Properties along State Street due to the Preferred Alternative.

Address	Photo	Description	Effect Determination	Impact to Property
100 Adams Street		Brick Early Ranch	No Adverse Effect	1020 ft^2 right-of-way take, 7% of property
Pleasant Grove Underpass (Site 42UT1452)		Art Moderne	Adverse Effect	Bridge demolished
Union Pacific Railroad and Depot (Site 42UT1029)		---	No Effect	---

The historic structures along the detour route (Main Street and 200 South, see Table 3-24) would not be impacted by the Preferred Alternative as no improvements outside of the existing roadway right-of-way are anticipated for Main Street and 200 South (see July 12, 2005 DOEFOE in Appendix D).

Indirect Impacts

The Preferred Alternative could indirectly affect historic structures along the length of the proposed project in the same way as the No-action Alternative. Historic sites may be removed due to commercial development.

3.16.3 Mitigation

A Memorandum of Agreement (MOA) to resolve adverse effects to historic properties will be agreed upon and executed by UDOT, FHWA, and SHPO.

3.17 HAZARDOUS WASTE SITES

3.17.1 Affected Environment

A search of the Utah Division of Environmental Response and Remediation (DERR) Comprehensive Emergency Response, Compensation, and Liability Information System (CERCLIS) database has determined that no known Comprehensive Emergency Response, Compensation, and Liability Act (CERCLA or Superfund) sites are located near the project study area. There are also no Resource Conservation and Recovery Act (RCRA) hazardous waste sites located near the project study area.

RCRA also regulates underground storage tanks (UST) and leaking underground storage tanks (LUST). A search of the DERR database indicated records of one property within about 650 feet of the project study area with a LUST (see Figure 3-14). The property previously occupied by the Carl Smith Service Station (500 South 100 East), currently Daylight Donuts, contains one LUST. The LUST is closed – cleanup was completed to state standards on October 4, 2000.

Figure 3-14. Leaking Underground Storage Tanks.

3.17.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not affect the identified LUST site since the site is outside the project study area.

Preferred Alternative

Direct Impacts

The Preferred Alternative would not affect the identified LUST site since the site is outside the project study area.

Indirect Impacts

There would be no indirect impacts to hazardous waste as a result of the Preferred Alternative.

3.17.3 Mitigation

If hazardous waste material is encountered during construction, mitigation will be performed in accordance with UDOT Standard Specification 01355, which directs the Contractor to stop work and notify the Project Engineer of any discovery of hazardous material. Disposition of hazardous material would then take place under guidelines set by the UDEQ.

3.18 VISUAL CONDITIONS

3.18.1 Affected Environment

Visual conditions of the project area are consistent with those of a highly urbanized area. Much of the project area is developed with commercial and residential properties (see Figure 3-15). The art moderne bridge does not dominate the landscape because it is mainly visible for only a short distance for people driving on State Street. The topography, including the roadway grade on a curve below natural ground, does not provide many views of the bridge. The roadway and bridge are, for the most part, not visible from any of the adjacent properties. The Gateway area southeast of State Street is a mixture of open agricultural land with commercial and residential development. The Wasatch Mountain Range, including Mount Timpanogos, is the dominant background feature in the project area.

Figure 3-15. Existing Visual Conditions in the Project Area.

The foreground views experienced in the area depend on the location of the observer. Because of the change in roadway from an underpass and the intrusion of the retaining walls to carry the railroad, and because the project is of a short length, added attention is given to the visual qualities within the project area. The landscape views from five perspectives are outlined below:

- **From the road:** The horizontal and vertical curvature of the roadway limit views from the road. The art moderne bridge is visible for a short distance from each direction. The cut slopes and foliage, as well as commercial development are the dominant views from the road.

- **From Wills Memorial Park:** The park improvements, primarily related to the baseball fields, are the dominant visual foreground features. Commercial development, the mobile home park, and other developments are visible but less dominant views.
- **From the mobile home park:** The view from the main activity areas on the row of mobile homes closest to the roadway is primarily of the mobile homes with the surrounding development, including Wills Memorial Park, obscured but somewhat visible. The park area is essentially not visible from the remainder of the mobile home park.
- **From 100 Adams Street:** Other than the distant view of the Wasatch Mountains, the view from the area near the residence at 100 Adams Street is primarily of the immediate and adjacent property. Vegetation obscures the view of properties near the Ace Hardware.
- **From Ace Hardware:** The views are primarily of surrounding commercial development and mountains. State Street is visible as it approaches the Geneva Road intersection.

3.18.2 Environmental Consequences

No-action Alternative

Visual conditions in the project area under the No-action Alternative would include changes associated with implementation of current and future zoning and land use plans. Residential land would continue to change to commercial uses (see Figures 3-1 and 3-2). The appearance of roadway features would remain mostly unchanged with shoulders, curb and gutter, sidewalks, parkstrips, and other landscape remaining unimproved. The appearance of the bridge would remain the same. Mature vegetation would remain, other than in areas being redeveloped and/or converted to other land uses.

Preferred Alternative

Direct Impacts

The appearance of the roadway and railroad crossing features would be modified. The bridge would be demolished and a road overpass would be constructed over the railroad tracks. This would cause visual changes for both drivers and residents in the project area. The retaining walls would have a visual impact to the area, primarily in the mobile home park and Wills Memorial Park.

The visual changes for five perspectives are outlined below:

- **From the road:** The view along State Street would change from a narrow two-lane roadway below ground level to a five-lane roadway with shoulders over the railroad (see Figure 3-16). Other roadway improvements, including curb and gutter, sidewalks, and parkstrips would be part of the viewscape. There would be some view of the surrounding community for a short duration from the overpass. The concrete barrier would obstruct the view of adjacent property.
- **From Wills Memorial Park:** For observers near the north end of the park, the retaining wall and concrete barrier would become the dominant view to the north. The retaining wall, including concrete barrier, would vary in height up to 28 feet. However, the

spectator stands for the baseball fields face to the south so the walls would not be within the normal line of sight. The revisions to be made to Wills Memorial Park would move the baseball spectator stands to the other side of the ball field. This distance from the walls would reduce the visual impact for most users of the park, and the walls would not obstruct the view of Mount Timpanogos from this location.

- **From the mobile home park:** The retaining wall on the south boundary of the mobile home park would become a dominant feature for some residents. The nine mobile homes adjacent to the roadway would experience this change; the remaining twelve mobile homes would not have a view of the wall during usual activities.

  The retaining wall (including concrete barrier) would range in height up to 26 feet in height. The three westerly mobile homes would be the most impacted, with adjacent retaining wall heights approximately 15 – 20 feet in height. These mobile homes are adjacent to the right-of-way line and there would not be a buffer between them and the retaining wall.

  The easterly six mobile homes would be impacted to a lesser degree because trees would soften the effect of the retaining wall. This retaining wall, approximately 20 – 26 feet in height, would be visible but would be less dominant in the landscape than it would be without the trees.
- **From 100 Adams Street:** There would be a minor change in the visual perspective from this location. State Street would be more visible to the west as it crosses over the railroad but would be almost at ground level near this location.
- **From Ace Hardware:** There would also be a minor change in the visual perspective from this location. The view of the overpass to the west would be basically blocked by the existing building. The roadway would be basically at ground level near the parking area.

Figure 3-16. Sample Overpass Visual Conditions.

Indirect Impacts

There would be no indirect visual impacts as a result of the Preferred Alternative.

3.18.3 Mitigation

Citizen input will be gathered on aesthetic treatments for the overpass structure and retaining walls during the design and construction of the Preferred Alternative.

3.19 ENERGY

This section discusses the energy requirements of the No-action and Preferred Alternatives.

3.19.1 Environmental Consequences

No-action Alternative

The No-action Alternative would not have any additional energy requirements due to construction. However, due to increased congestion and stop-and-go traffic on State Street, energy requirements would increase over the long term.

Preferred Alternative

Direct Impacts

The Preferred Alternative would have energy demands during construction. Once construction is completed, congestion would be relieved and traffic would flow more smoothly than with the

No-action Alternative, thus increasing vehicle speeds, increasing fuel efficiency, and reducing delay. The Preferred Alternative would decrease energy requirements over the long term as compared to the No-action Alternative.

Indirect Impacts

There would be no indirect impacts associated with energy as a result of the Preferred Alternative.

3.20 INVASIVE SPECIES

3.20.1 Affected Environment

Executive Order 13112 directs federal agencies to expand and coordinate their efforts to combat the introduction and spread of plants and animals not native to the United States. Non-native flora and fauna can cause substantial changes to ecosystems, upset ecological balance, and cause economic harm to our nation's agricultural and recreational sectors. Since roadway corridors provide opportunities for the movement of invasive species through the landscape, it is important that roadway projects include measures to combat the introduction and spread of invasive species.

3.20.2 Environmental Consequences

No-action Alternative

The No-action Alternative would not provide additional opportunities for movement of invasive species through the landscape.

Preferred Alternative

Direct Impacts

The Preferred Alternative includes highway construction and would provide opportunities for the movement of invasive species through the landscape.

Indirect Impacts

There would be no indirect impacts associated with invasive species as a result of the Preferred Alternative.

3.20.3 Mitigation

To minimize the movement of invasive species, the Contractor will be required to comply with UDOT's **Special Provision 02926S - Invasive Weed Control** to minimize the spread and introduction of invasive species. Some of the measures in the Special Provision include:

- Cleaning all earth-moving equipment entering the project area
- Treating existing noxious weeds ten days before starting earthwork operations
- Controlling invasive weeds using pre-emergent, selective, and non-selective herbicides as appropriate

3.21 CONSTRUCTION IMPACTS

3.21.1 Environmental Consequences

No-action Alternative

There would be no construction impacts from the implementation of the No-action Alternative.

Preferred Alternative

Construction of the Preferred Alternative would cause the closure of State Street. A construction detour route would divert eastbound traffic from State Street to 200 South and then south on Main Street until it rejoins State Street (see Figure 2-10). Improvements to Main Street and 200 South would include an asphalt overlay, re-striping, and the addition of a right-turn lane at the intersection of Main Street and 200 South. Improvements would stay within the existing roadway right-of-way. The construction detour would be in operation for about 18 months.

Social Conditions

Area residents and other people using State Street and the construction detour route would experience minor, temporary inconveniences due to noise, dust, and travel delays. Access to all properties would be maintained; however, there would be some temporary construction impacts to accesses for some properties.

Economic Conditions

Some businesses in the project area would experience temporary construction inconveniences due to dust, noise, and traffic associated with roadway construction.

The construction detour route would increase exposure to the following businesses along 200 South and Main Street and would likely increase sales to these businesses (see Figure 2-10 for business locations):

- Don's Auto (345 West 200 South)
- Jazz 'n Place (295 West 200 South)
- S & J Automotive (285 West 200 South)
- Cory's Auto Electric Repair (275 West 200 South)
- Triple R Restoration Auto Body & Paint (326 West 200 South)
- Jefferson Whitney Furniture Co.
- Pioneer Plastering & Stucco (211 West 200 South)
- Copy Tec (185 West 200 South)
- U.S. Post Office
- Office Building - Dentist, Doctor, Attorney (192 South Main Street)
- Scott Hancock Photography (214 South Main Street)
- The Tin Pail Antiques (214 South Main Street)
- Zions Bank (225 South Main Street)
- Nutall, Brown, & Leavitt Insurance (280 South Main Street)
- American Playground (315 South Main Street)
- Durfey Extra Care Dry Cleaners (325 South Main Street)
- One Man Band Café (340 South Main Street)

Air Quality

Construction of the Preferred Alternative would result in temporary negative effects to air quality in the project area due to increased dust and particulates.

Noise

Construction noise impacts are considered temporary and would be minimized through adherence to UDOT Standard Specification 01355- Environmental Protection Section 1.8 - Noise and Vibration Control. Extended disruption of normal activities is not anticipated, since no one receptor is expected to be exposed to construction noise of long duration.

Noise impacts due to additional traffic on 200 South and Main Street have been analyzed and are shown in Figure 3-17. Many of the buildings along Main Street and 200 South are businesses and would not be impacted by noise due to the construction detour; however, there are nine residences that would be impacted by a noise level of 65 dBA or greater. These impacts would be temporary and would only last for the duration of the detour.

Water Quality

Under the Preferred Alternative, effects to ground and surface waters would be negligible. Relocation or reconstruction of some features of the existing storm drain system would be required, including ditches, pipes, turnouts, and catch basins. During construction there is a potential for temporary soil erosion and sediment/siltation impacts to nearby irrigation ditches and canals.

Permits

Construction of the Preferred Alternative would require the application for and approval of a Storm Water General Permit for Construction Activities, as discussed in Section 3.11. Also, a permit for air quality impacts during construction would be obtained from the UDAQ by the contractor.

Historic Resources

As part of the cultural resources report completed by EarthTouch, *A Cultural Resource Inventory of the Bridge/Underpass Crossing at State Street (US-89) Between 200 South and Main Street in Pleasant Grove, Utah County, Utah*, a cursory inventory of structures located along the detour route was performed (see Table 3-24).

The historic structures along the detour route would not be impacted by the Preferred Alternative as no improvements outside of the existing roadway right-of-way are anticipated for Main Street and 200 South.

Hazardous Waste Sites

It is not anticipated that petroleum contamination would be found during construction of the Preferred Alternative, as discussed in Section 3.17.

CONSTRUCTION DETOUR

LEGEND:

- NOISE CONTOUR (dBA)
- NOISE IMPACT
  (≥ 65 dBA FOR RESIDENCES/SCHOOLS/PARKS
  ≥ 70 dBA FOR BUSINESSES)

SCALE 1: 300

150 0 150 300 600 ft

CONSTRUCTION DETOUR
FIGURE 3-17

$$file$$
$$user$$
$$time$$
$$date$$

Visual Conditions

There would be some temporary visual impacts to the project area with the addition of construction signs, barricades, exposed earth, and construction equipment during construction of the Preferred Alternative. Residents along the construction route would notice increased traffic congestion.

Invasive Species

The potential exists for invasive species to be introduced or propagated in the project area due to construction activities that disturb the existing ground cover.

3.21.2 Mitigation

Social Conditions

Impacts during construction to residences will be mitigated through implementation of a traffic control plan with advance notice to those affected. Also, noise and vibration control and dust control measures will be used. Access to all businesses and residences will be maintained.

Economic Conditions

Access will be maintained to all businesses during construction.

Air Quality

A permit for air quality impacts during construction will be obtained from UDAQ by the contractor. Fugitive dust during construction will be mitigated and controlled in accordance with a dust-control plan to be developed with UDAQ. This plan will include measures to minimize fugitive dust, such as application of dust suppressants and water sprays, minimizing the extent of disrupted surface areas, and restricting activities during high-wind periods.

Noise

The contractor will be required to abide by UDOT Standard Specification 01355 – Environmental Protection – Section 1.8 Noise and Vibration Control.

Water Quality

To minimize the construction impacts to surface waters, a SWPPP will be developed and incorporated into the final design plans of the project and an NOI form will be submitted to UDWQ prior to construction of the project. This plan will include the use of BMPs, which will minimize temporary impacts to water resources. Construction-related erosion and sedimentation impacts would be mitigated with the use of BMPs in accordance with provision of the Memorandum of Understanding (MOU) between UDOT and UDEQ and approved by UDWQ.

Hazardous Waste Sites

If hazardous waste is encountered during construction, mitigation will be coordinated in accordance with UDOT Standard Specification 01355 – Environmental Protection Section 1.3 Hazardous Material Discovered during Construction, which directs the contractor to stop work and notify the project engineer of the discovery. Disposition of the hazardous material then would take place under guidelines set by UDEQ.

Visual Conditions

Visual impacts due to construction are considered temporary, and no mitigation is required.

Invasive Species

The Contractor will abide by UDOT's Special Provision 02926S - Invasive Weed Control to minimize the spread and introduction of invasive species. Some of the measures in the Special Provision include:

- Cleaning all earth-moving equipment entering project
- Treating existing noxious weeds ten days before starting earthwork operations
- Controlling invasive weeds using pre-emergent, selective, and non-selective herbicides as appropriate

3.22 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This EA is based on comprehensive transportation planning that considered the need for future mobility within the context of present zoning regulations and future land use development. The local short-term impacts and use of resources by the Preferred Alternative are consistent with the maintenance and enhancement of long-term productivity. All roadway projects require the investment or commitment of some resources found in the existing environment. Short-term refers to the immediate consequences of the project; long-term relates to its direct or secondary effects on future generations.

3.22.1 Environmental Consequences

No-action Alternative

Short-term consequences of the No-action Alternative include traffic congestion around major intersections and along major roadways, since no new construction that would create an increase in capacity would take place in the project area.

Preferred Alternative

Short-term consequences of the Preferred Alternative include:

- Conversion of existing land use (commercial and residential) to transportation use
- Inconvenience to residents, business owners, suppliers, and employees during construction

Several long-term productivity enhancements may be realized from the Preferred Alternative, including:

- An efficient transportation network in a rapidly developing area that would provide better access for daily commuting and local trips
- Increased motorist convenience
- Reduced energy usage due to less delay time

- Potential for new tax base in the project area by providing transportation infrastructure to accommodate local economic development
- Enhanced employment growth for the region

3.23 ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PREFERRED ALTERNATIVE

3.23.1 Environmental Consequences

No-action Alternative

There would be no commitment of natural, physical, human, or fiscal resources under the No-action Alternative.

Preferred Alternative

Implementation of the Preferred Alternative would involve a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a roadway facility. However, if a greater need arises for use of the land or if the roadway facility is no longer needed, the land could be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and roadway construction materials such as cement, aggregate, and bituminous material would be expended. Additionally, large amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials are generally not retrievable. However, they are not in short supply, and their use would not have an adverse effect on continued availability of these resources. Any construction would also require a substantial one-time expenditure of both state and federal funds which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region would benefit by the improved quality of the transportation system. These benefits consist of improved accessibility and safety, time savings, and greater availability of quality services, which are anticipated to outweigh the commitment of these resources.

3.24 CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations require the assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts result from incremental impacts of this proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7).

The geographic area addressed in this cumulative impacts analysis is Pleasant Grove City limits. The time frame of the analysis is from pioneer settlement through the planning period of 2020.

Cumulative Impact
40 CFR 1508.7
Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Past, Present, and Reasonably Foreseeable Future Actions

Past Actions

Impacts to the environment have resulted from many past actions. The following is a list of some of these actions:

Pioneer Settlement – Pleasant Grove community settled in 1850.

Residential, Agricultural, and Commercial Development – Actions by private individuals and companies have placed most of the land between the Wasatch Mountains and Utah Lake into agricultural, residential, or commercial use.

Southern Utah Railroad (now UTA/UPRR) – Railroad constructed from Ogden south to serve central Utah communities – reached Pleasant Grove in 1873.

Salt Lake and Utah Railroad – Electric interurban railroad operated from 1914 to 1946 between Provo and Salt Lake City.

State Street (US-89) – Principal north-south highway serving Utah County, developed over time since pioneer settlement.

I-15 – Freeway constructed as part of the National System of Interstate and Defense Highways, constructed in this area in the 1960s.

Geneva Road – widened roadway from a two-lane facility to a five-lane facility in the 1990s.

Pleasant Grove Interchange – new interchange constructed in 2002 on I-15.

Pleasant Grove Boulevard – new road constructed in 2002 from the Pleasant Grove Interchange to State Street (US-89).

Pleasant Grove Gateway Area – area between State Street and the Pleasant Grove Interchange. Zoning of the area has fostered residential, commercial, and business/manufacturing park development.

Present Actions

The Gateway Development – The Gateway Development between State Street and the I-15 Pleasant Grove Interchange is facilitating the construction of business offices, manufacturing buildings, commercial enterprises, and residential units.

Private Land Development – About 30 mostly residential developments have been approved in Pleasant Grove. These developments range from 2 building lots to 340 units.

Reasonably Foreseeable Future Actions

The Gateway Development The Gateway area is expected to continue to develop in accordance with the Pleasant Grove General Plan.

Transportation – Table 3-26 lists and describes transportation projects that are currently included for construction between 2005 – 2020 on the Utah Valley Long Range Transportation Plan, UDOT's Statewide Transportation Improvement Program (STIP), and the Pleasant Grove Master Transportation Plan. All transportation projects are in the planning stage, and detailed impact information is not available.

Table 3-26. Planned Transportation Projects.

Planned Area Transportation Improvements	Project Description and Status	Existing Number of Travel Lanes	Proposed Number of Travel Lanes
2005-2014			
State Street: 200 South Lindon to 100 East American Fork	On Utah Valley Long Range Transportation Plan: widening, new RR bridge	4	6
Lindon 700 North/Pleasant Grove 2000 West: Geneva Road, Lindon to State St, American Fork	On Pleasant Grove Transportation Master Plan; On Utah Valley Long Range Transportation Plan; On UDOT's STIP: new road, bike lane	0	4
Pleasant Grove Blvd: 2000 West to State St.	On Utah Valley Long Range Transportation Plan: widening, 10 ft asphalt trail	2	4
Pleasant Grove Transit Hub: Downtown Pleasant Grove	New Transit Center	---	---
2015-2020			
Battle Creek Drive: State St. to Pleasant Grove Main St.	On Pleasant Grove Transportation Master Plan, Utah Valley Long Range Transportation Plan: widening	2	4
Pleasant Grove 1000 South: Locust Ave. to 1150 East	On Utah Valley Long Range Transportation Plan: new road	0	2
Pleasant Grove 2600 North: American Fork 1100 East to Canyon Rd.	On Utah Valley Long Range Transportation Plan: widening	2	4

Private Land Development

According to the Pleasant Grove current zoning map and the Pleasant Grove General Plan, some existing agricultural land would be converted to residential and/or commercial use. Some current residential use is identified as future commercial use.

Cumulative Impacts

This cumulative impact analysis focused on those environmental resource areas that would experience a measurable direct impact by the proposed project and, when combined with other actions in or near the project area, would result in substantive cumulative impacts. The resource elements of concern are:

- Land use
- Social
- Economic Conditions
- Cultural Resources
- Visual Conditions

Water quality and noise would have some direct project impact (as previously described). However, they are not of concern in the context of this cumulative impact analysis because they would not experience substantive cumulative impacts.

Land Use

The Pleasant Grove area has experienced continual land use changes beginning with the pioneer settlement. Early growth as an agricultural community led to incorporation as a city in 1855. The Utah Southern Railroad and the Salt Lake and Utah Railroad provided easy access to products from eastern states as well as the shipment of local products to other states. With the increased availability of the automobile, State Street (US-89) played a much larger role in providing access to this area. The construction of I-15 further influenced development and land use changes with through traffic primarily using I-15 and State Street providing more local and interregional access.

Land uses have not been static but have changed over the years to meet market conditions. As an example of changing land uses in the project area, the Utah Southern Railroad (now UPRR) runs diagonally through an area known as Block 4 of Pleasant Grove. This block has seen developments come and go, such as fruit and vegetable canneries, and fruit and vegetable packers, ore loading facilities, carnival headquarters, grain mills, tithing office and barn, grocery and meat market, and farms (http://www.plgrove.org/Historical/overview.htm). Current uses now include the Thorneberry Apartments, Post Office, and Ace Hardware.

Pleasant Grove is currently undergoing the most change in the Gateway area between State Street and the I-15 Pleasant Grove Interchange. Since the construction of the Pleasant Grove Interchange and Pleasant Grove Boulevard in 2002, business offices, manufacturing buildings, commercial enterprises, and residential units have been developed on land previously used for agricultural purposes. The Pleasant Grove General Plan provides for these changes in land use and it is anticipated that the Gateway area would continue to develop in accordance with the

General Plan. Because big-box retailers such as Wal-Mart and Costco are already located nearby in Lindon and American Fork, this development is geared more towards walkable communities with upscale stores. At least seven residential developments are under construction, or have been approved, in this area. Several of these residential developments are multi-family housing designed as affordable housing for people who are in the 60th percentile of the cities' average income.

This project would provide some improved access to the Gateway area but the primary access is provided by the existing Pleasant Grove Interchange and Pleasant Grove Boulevard. Additional access would be provided by the proposed 700 North (Lindon) and 2000 West (Pleasant Grove) roadway. The traffic carrying capacity provided by this project and other foreseeable transportation actions would serve the transportation needs of this developing area. Based on the current development trends, it is expected that future land use in Pleasant Grove would be very similar to that shown on the General Plan.

Social Conditions

Past actions have developed the current social setting, which has changed with development since pioneer times. The area adjacent to State Street, as well as the Gateway area, continues to experience a change in land use and residents in the area continue to experience a change in their lifestyles. Development pressures cause changes from some residential use to commercial, multi-family housing, or other uses which change the social interaction of residents who remain. The number of residents in the area increase as the housing unit types changes from individual homes to multi-family apartments and condominiums. Shopping patterns change as commercial developments are constructed.

This project would have little contribution to cumulative social impacts. There are no direct social impacts and the indirect impacts are possible hastened timing of development.

Economic Conditions

Many past actions, both public and private, have been geared to improve economic conditions. Current efforts to develop the Gateway area, as well as commercial areas along State Street and other areas of Pleasant Grove, are also intended to improve the economic conditions of Pleasant Grove and adjacent communities. This project would facilitate this development and alleviate congestion that currently affects existing businesses.

Cultural Resources

Past public and private actions have created the historic resources in the Pleasant Grove area, including the structure at 100 Adams Street, the Pleasant Grove Underpass, the Union Pacific Railroad and Depot, and the structures in the Pleasant Grove Historic District. Past public and private actions undoubtedly have also adversely impacted historic and paleontological resources. The designation of the Pleasant Grove Historic District in 1995 and the registration of several properties on the National Register of Historic Places would afford some level of protection to historic properties although it can be expected there would be additional impacts to cultural resources in the future as actions are taken to meet community, residential, economic, and commercial needs. However, additional impacts to cultural resources cannot be identified by foreseeable actions.

This project would contribute to cumulative impacts to cultural resources with an adverse impact to the Pleasant Grove Railroad Underpass and a no adverse impact to the historic property at 100 Adams Street.

Visual Conditions

Past actions have transformed the visual landscape from desert mountain valley vegetation to a highly developed urban and agricultural area. The overall visual presentation is urban/suburban; the localized view is dependent on the current use, be it open space, single story, or multi-story buildings. The development taking place in the Gateway area is changing the look of this part of Pleasant Grove as agricultural land becomes developed land. The Preferred Alternative for State Street would add a noticeable visual change as an overpass replaces an underpass. This new look to State Street would complement the changes being made by private development and would be more open and inviting to pedestrian use.

3.25 CONTEXT SENSITIVE SOLUTIONS

Alternatives were developed using input from residents and land owners along the project corridor, affected or interested federal and state agencies, Pleasant Grove City, current and future businesses, and special interest groups. As a result, design-related Context Sensitive Solutions (CSS) would be implemented during the design phase of the proposed project. CSS will include:

- Aesthetic treatments (i.e., varying colors and textures) to the retaining walls of the overpass (citizen input will be gathered on aesthetic treatments for the overpass structure and retaining walls during design and construction)
- Addition of 6-ft sidewalks along the corridor
- Landscaping compatible with the surrounding area, including Wills Memorial Park
- Improvements to the drainage system in the project area, including along 220 South
- Monetary contribution towards the implementation of planned improvements to Wills Memorial Park in Pleasant Grove
- Improvements to the railroad facilities
- Roadway section compatible with future plans for expansion to seven-lane roadway

3.26 COMPARISON SUMMARY OF THE PREDICTED ENVIRONMENTAL EFFECTS OF ALTERNATIVES

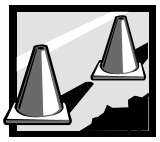
A comparison summary of the predicted environmental effects of the No-action Alternative and the Preferred Alternative is presented in Table 3-27.

Table 3-27. Environmental Effects Comparison Summary.

Environmental Issue	No-action Alternative	Preferred Alternative
Land Use 	▪ No immediate conversion of commercial and residential properties to roadway right-of-way	▪ Widened roadway would convert 0.4-ac commercial property and 0.03-ac residential property to roadway use ▪ Widened roadway would require 0.6-ac of property from Wills Memorial Park, relocate two barbecue grills, and remove the J.C. Building (used by Mountainland Head Start). The function and use of the park would not be affected by the Preferred Alternative.
Farmlands 	▪ No Impact	▪ No Impact
Social Conditions 	▪ No Impact	▪ Temporary inconvenience associated with construction noise, dust and access disruptions ▪ Increased long-term public satisfaction with traffic conditions
Environmental Justice 	▪ No Impact	▪ J.C. Building (used by Mountainland Head Start) would be removed.
Relocations 	▪ No relocations would be required ▪ Commercial development is expected to continue and would indirectly require relocations	▪ No relocations would be required ▪ Commercial development is expected to continue and would indirectly require additional relocations
Economic Conditions 	▪ Value of the property along the corridor would increase less rapidly ▪ Area would be less desirable to commercialize, resulting in a loss of tax base for Pleasant Grove City	▪ Businesses along corridor would experience economic effects associated with temporary construction inconvenience ▪ Businesses should gain positive long-term effects due to increased roadway capacity, decreased traffic congestion, improved accessibility, and increased exposure to potential consumers ▪ Improved mobility would facilitate development of vacant parcels within and surrounding the project area ▪ New businesses would add to revenue in local economy through sales and property taxes and would provide employment opportunities
Pedestrians and Bicyclists 	▪ Pedestrian mobility and safety would not be improved ▪ Sidewalks would not be repaired or extended	▪ Pedestrian mobility and safety would be improved through the construction of new sidewalks that would extend to project limits and meet the guidelines established by the ADA. ▪ Bicyclists would be able to travel in 8-ft wide shoulders located on both sides of State Street.

Environmental Issue	No-action Alternative	Preferred Alternative
Air Quality 	▪ NAAQS 1-hour and 8-hour CO concentrations would not be exceeded	▪ NAAQS 1-hour and 8-hour CO concentrations would not be exceeded ▪ Meets the regional air quality conformity requirements ▪ Not expected to cause new violations of the CO or PM10 standard
Noise 	Noise Impacts: • 17 Residences • 0 Businesses • 2 Schools & Parks	Noise Impacts (after relocations and mitigation): • 2 Residences
Water Quality 	▪ The inadequate drainage facilities and conditions along the corridor would not be improved ▪ Wells in the project area would not be affected	▪ Impervious area would increase from about 2.6 ac to 5.5 ac, increasing the 10-year peak flow for the project area from roughly 7 cfs to 14 cfs ▪ Groundwater recharge would not be affected, since most groundwater recharge occurs along the bases of mountain ranges ▪ Drainage facilities and conditions would be improved ▪ Wells in the project area could be capped ▪ Contaminants from the roadway storm water would be collected and conveyed to state-approved storm drain systems
Wetlands 	No Impact	No Impact
Floodplains 	No Impact	No Impact
Wildlife 	No Impact	No Impact
Threatened and Endangered Species 	No Impact	No Impact

Environmental Issue	No-action Alternative	Preferred Alternative
Cultural Resources 	Historic sites may be removed due to commercial development	▪ Some historic structures would be directly affected (impacts would be mitigated): No Adverse Effect: 100 Adams Street Adverse Effect: Railroad Bridge ▪ Historic sites may be removed due to commercial development
Hazardous Waste Sites 	Identified LUST site would not be affected	Identified LUST site would not be affected
Visual Conditions 	▪ Visual changes associated with implementation of current and future zoning and land use plans ▪ The appearance of roadway features would remain mostly unchanged with shoulders, curb and gutter, sidewalks, parkstrips, and other landscape remaining unimproved ▪ The appearance of the bridge would remain the same ▪ Mature vegetation would remain, other than in areas being redeveloped and/or converted to other land uses	▪ The appearance of the roadway and railroad crossing features would be modified – the bridge would be demolished and a road overpass would be constructed over the railroad tracks. Retaining walls would have a visual impact in the area. ▪ **From the road:** View would change to a five-lane roadway over the railroad, with improvements to curb and gutter, sidewalks, and parkstrips. The concrete barrier would obstruct the view of adjacent property. ▪ **From Wills Memorial Park:** Retaining walls would become the dominant view to the north for observers near the north end of the park. ▪ **From the mobile home park:** The retaining wall on the south boundary of the mobile home park would become a dominant feature for 9 mobile homes adjacent to the roadway. ▪ **From 100 Adams Street:** Minor changes in visual perspective. ▪ **From Ace Hardware:** Minor changes in visual perspective
Energy 	Energy requirements would increase over time due to increased congestion and stop-and-go traffic.	▪ Energy would be required for construction ▪ Traffic flow would be improved, increasing vehicle speeds and fuel efficiency ▪ Energy requirements would decrease over the long term as compared to the No-action Alternative
Invasive Species 	No potential for introduction or spread of invasive species.	Potential to introduce or spread invasive species exists due to construction activities. This would be reduced by mitigation measures.

Environmental Issue	No-action Alternative	Preferred Alternative
Construction 	No Impact	▪ A construction detour route would divert traffic from State Street to east on 200 South and then south on Main Street until it rejoins State Street ▪ Area residents and other people using State Street and the construction detour route would experience minor temporary inconveniences due to noise, dust, and travel delays. ▪ Some businesses in the project area would experience temporary construction inconveniences due to dust, noise, and traffic associated with roadway construction. ▪ Businesses along 200 South and Main Street would have increased exposure. ▪ Construction would result in temporary negative effects on air quality in the project area due to increased dust and particulates. ▪ Construction noise impacts are considered temporary and would be minimized though adherence to UDOT Standard Specifications for noise and vibration control. ▪ Some homes would be temporarily impacted by a noise level of 65 dBA or higher as a result of increased traffic on 200 South and Main Street. ▪ Relocation or reconstruction of some features of the existing storm drain system would be required, including ditches, pipes, turnouts, and catch basins. During construction there is a potential for temporary soil erosion and sediment/siltation impacts to nearby irrigation ditches and canals. Construction-related erosion and sedimentation impacts would be mitigated with the use BMPs. ▪ A Storm Water General Permit for Construction Activities and Air Quality Approval Order would be required during construction. ▪ Temporary visual impacts would occur from construction signs, barricades, exposed earth, and construction equipment. ▪ Residents along the construction route would notice increased traffic congestion. ▪ The potential exists for invasive species to be introduced or propagated in the project area due to construction activities that disturb the existing ground cover.

3.27 SUMMARY OF MITIGATION AND OTHER COMMITMENTS

3.27.1 Land Use

- Constructing a new J.C. Building (used by Mountainland Head Start) in another area of Wills Memorial Park.
- Relocating the barbecue grills closer to the park pavilion.
- Financial assistance from UDOT to help construct two additional softball fields in conjunction with planned park improvements

3.27.2 Farmland

- No mitigation is required.

3.27.3 Social Conditions

- No mitigation is required.

3.27.4 Environmental Justice

- A new J.C. Building (used by Mountainland Head Start) will be constructed in another area of Wills Memorial Park. Coordination with Mountainland Head Start and the City will be ongoing during the design phase of the project to ensure that the project will not have any adverse effects to the Head Start Program.

3.27.5 Relocations

- Right-of-way acquisition will occur in accordance with federal, state, and local relocation policies.
- The acquisition and relocation program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

3.27.6 Economic Conditions

- Access will be maintained to all businesses during construction.
- Where minor impacts to businesses (such as driveway reconstruction and parking lot reconfiguration) may occur, the property and business owners will be consulted during the design phase to develop solutions that will best suit the property while fulfilling the purpose and need of the project.

3.27.7 Pedestrians and Bicyclists Commitments

- Continuous sidewalks will be provided on both sides of the road.
- Crosswalks for State Street will be placed at all signalized intersections.

3.27.8 Air Quality

- Mitigation during construction will include the use of dust control measures per UDOT Standard Specification 1572 Dust Control and Watering.
- A permit for air quality impacts during construction will be obtained from UDAQ by the contractor.
- Ongoing signal time maintenance will be performed by UDOT.

3.27.9 Noise

- Construction noise impacts are considered temporary and will be minimized though adherence to UDOT Standard Specification 1355 – Environmental Protection – Section 1.8 Noise and Vibration

3.27.10 Water Quality

- A new storm drain system will be constructed that will comply with current UDEQ and UDWQ standards.
- An SWPPP will be developed and incorporated into the final design plans of the project and an NOI form will be submitted to the UDWQ prior to construction of the project.
- Short term impacts to water quality will be minimized through implementation of UDOT's BMPs.

3.27.11 Wetlands

- No mitigation is required.

3.27.12 Floodplains

- No mitigation is required.

3.27.13 Wildlife

- No mitigation is required.

3.27.14 Threatened and Endangered Species

- No mitigation is required.

3.27.15 Cultural Resources

- A MOA to resolve adverse effects to historic properties will be agreed upon and executed by UDOT, FHWA, and SHPO.

3.27.16 Hazardous Waste

- If hazardous waste material is encountered during construction, mitigation will be performed in accordance with UDOT Standard Specification 01355, which directs the Contractor to stop work and notify the Project Engineer of any discovery of hazardous material. Disposition of hazardous material would then take place under guidelines set by the UDEQ.

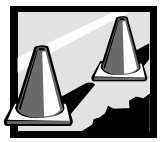
3.27.17 Visual Conditions

- Citizen input will be gathered on aesthetic treatments for the overpass structure and retaining walls during design and construction

3.27.18 Invasive Species

- The contractor will abide by UDOT's Special Provision 02926S – Invasive Weed Control to minimize the spread and introduction of invasive species. Some of the measures in the Special Provision include:
  - Cleaning all earth-moving equipment before entering project
  - Treating existing noxious weeds ten days before staring earthwork operations

- Controlling invasive weeds using pre-emergent, selective, and non-selective herbicides as appropriate



3.27.19 Construction

- **Social Conditions** – Impacts during construction to churches and residences will be mitigated through implementation of a traffic control plan with advance notice to those affected, implementation of noise and vibration control, and dust control measures. Access to residences will be maintained.
- **Economic Conditions** – Access will be maintained to all businesses during construction.
- **Air Quality** – A permit for air quality impacts during construction will be obtained from the UDAQ by the contractor. Fugitive dust during construction will be mitigated and controlled in accordance with a dust-control plan to be developed with UDAQ. This plan will include measures to minimize fugitive dust, such as application of dust suppressants and water sprays, minimizing the extent of disrupted surface areas, and restricting activities during high-wind periods.
- **Noise** – The contractor will be required to abide by UDOT Standard Specification 01355 – Environmental Protection – Section 1.8 Noise and Vibration Control.
- **Water Quality** – To minimize the construction impacts to surface waters, an SWPPP will be developed and incorporated into the final design plans of the project and an NOI form will be submitted to the UDWQ prior to construction of the project. This plan will include the use of BMPs, which will help minimize temporary impacts to water resources.
- **Hazardous Waste Sites** – If hazardous waste is encountered during construction, mitigation will be coordinated in accordance with UDOT Standard Specification 01355 – Environmental Protection Section 1.3 Hazardous Material Discovered during Construction, which directs the contractor to stop work and notify the project engineer of the discovery. Disposition of the hazardous material then will take place under guidelines set by the UDEQ.
- **Visual Conditions** – Visual impacts due to construction are considered temporary and no mitigation is required.
- **Invasive Species** – The contractor will abide by UDOT's Special Provision 02926S – Invasive Weed Control to minimize the spread and introduction of invasive species. Some of the measure in the Special Provision include: cleaning all earth-moving equipment before entering project, treating existing noxious weeds ten days before starting earthwork operations, and controlling invasive weeds using pre-emergent, selective, and non-selective herbicides as appropriate.

3.27.20 Context Sensitive Solutions

- Aesthetic treatments (i.e., varying colors and textures) to the retaining walls of the overpass (citizen input will be gathered on aesthetic treatments for the overpass structure and retaining walls during design and construction)
- Addition of 6-ft sidewalks along the corridor
- Landscaping compatible with the surrounding area and the park

- Improvements to the drainage system in the project area, including along 220 South
- Monetary contribution towards the implementation of planned improvements to Wills Memorial Park in Pleasant Grove
- Improvements to the railroad